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AZ AI PÉNZÜGYI ÉS SZÁMVITELI SZAKMÁRA GYAKOROLT HATÁSA, ÉS AZ ÜZLETI ISKOLÁK SZEREPE A DIÁKOK AI KORSZAKBELI FELKÉSZÍTÉSÉBEN

THE IMPACT OF AI ON THE FINANCE AND ACCOUNTING PROFESSION AND HOW HIGER EDUCATION INSTITUTIONS CAN PREPARE STUDENTS TO THRIVE IN THE AI ERA

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1. INTRODUCTION

Rapid advances in artificial intelligence (AI) are causing a radical change in the finance and accounting industry. Finance professionals have historically been in charge of handling money and investments; this includes banking, corporate finance, risk management, insurance, financial planning, and investment management. Financial accounting, managerial accounting, auditing, tax accounting, and forensic accounting are important areas of focus for accounting professionals, who also concentrate on documenting, summarizing, and reporting financial transactions.

Professionals in finance and accounting work in a variety of environments, including private practices, public sector organizations, consulting businesses, nonprofits, and corporate headquarters and financial institutions. AI's incorporation into various domains is transforming task execution, improving decision-making, accuracy, and efficiency.

In simple terms, we can define artificial intelligence as computer systems or computers that are capable of carrying out tasks that are normally associated with human intelligence. AI in finance refers to the application of technology, such as machine learning and sophisticated algorithms to data analysis, work automation, and better decision-making. Robotic process automation (RPA), machine learning, deep learning, expert systems, natural language processing (NLP), and generative AI are important AI technologies in the accounting and finance industries.

Robotic process automation (RPA) mostly handles repetitive activities, processes information using rule-based models and produces outputs or actions according to specified rules. Without human assistance, machine learning algorithms identify patterns in data and provide predictions or judgments. Natural language processing uses deep learning, a more sophisticated type of machine learning based on neural networks that can handle bigger and more complicated datasets. The finance and accounting sectors are among the top industries investing heavily in AI. Financial institutions, in particular, are leveraging AI to enhance efficiency, reduce operational risks, and improve the quality of their services. AI technologies are being used for various applications, including fraud detection, credit risk management, trading strategies, and customer service automation. For example, AI can analyse large amounts of financial data and news as soon as they happen, providing insights that traders can use to optimize their strategies. AI-powered chatbots and virtual assistants are also being deployed to handle customer inquiries, providing quick and accurate responses.

use knowledge bases, decision trees, and inference engines to solve issues by mimicking the decision-making skills of human experts in particular fields. Natural communication between humans and computers is made possible by NLP, which gives computers the ability to comprehend, interpret, and produce human language. In response to human input, generative AI can produce unique material, including text, photos, movies, audio, and software code.

There are obstacles to the financial industry's adoption of AI. Even though artificial intelligence (AI) has many advantages, such higher production and lower costs, it also raises

questions about job displacement and the need for new skill sets. To stay relevant in an AI-driven economy, finance professionals need to embrace continuous learning and acquire AI-related skills.

Among the top industries making significant investments in AI are the finance and accounting sectors. AI is being used by financial organizations in particular to increase productivity, lower operational risks, and raise service quality. Applications of AI technologies include trading techniques, credit risk management, fraud detection, and automated customer support. AI, for instance, can instantly evaluate enormous volumes of news and financial data, giving traders insights to improve their tactics. Chatbots and virtual assistants driven by AI are also being used to respond to consumer questions in a timely and precise manner.

Finance professionals are becoming increasingly concerned about job displacement despite the benefits that AI is bringing. Many people worry that AI may replace them in their jobs, particularly in jobs that need standardized and repetitive operations. But AI is also improving current positions and opening up new ones. AI, for example, can relieve financial professionals of routine duties so they can concentrate on more valuable pursuits like strategic planning and decision-making.

In order to prepare upcoming finance professionals for a world driven by artificial intelligence, educational institutions are essential. Faculty and business schools must modify their courses to include knowledge and abilities linked to artificial intelligence. This could entail adding new accounting and finance courses that concentrate on AI or incorporating AI ideas into already-existing courses. Students can also get the skills they need to succeed in an AI-driven market by participating in practical AI applications including case studies, practical projects, and industry partnerships.

The impact of artificial intelligence (AI) on finance professionals is examined in this research paper, along with how AI is changing the accounting and finance industries, the skills needed to succeed in this new environment, and the role that educational institutions play in preparing upcoming finance professionals for a world driven by AI.

1.1 The finance and accounting profession.

The finance profession involves managing money and investments for individuals, corporations, and governments. Key areas include investment management, corporate finance, financial planning, risk management, insurance, and banking ((CFA Institute, 2024).

The accounting profession on the other hand focuses on recording, summarizing, and reporting financial transactions. The key areas are as follows: financial accounting, auditing, tax accounting, managerial accounting, and forensic accounting (ACCA, 2024).

The finance and accounting professionals work in a variety of settings. Some of the work setting include.

- Corporate offices where they manage the finances of businesses across all industries.
- Financial institutions like banks, investment firms and insurance companies.

- Public sector where they handle finances for government agencies and public organizations.
- Consulting firms where they provide financial and accounting advice to clients.
- Nonprofit organizations where they manage funds and ensure compliance with financial regulations.
- Private practice where they offer specialized services like tax preparation and financial planning.

1.2 Artificial Intelligence Definitions

Generally, AI can be defined as computer systems or machines that can perform tasks that normally requires human intelligence (ACCA, 2023, p. 6).

In finance, AI refers to the use of technology, including machine learning and advanced algorithms to analyse data, automate repetitive tasks, and improve decision making in the financial industry (IBM, 2023).

Some of the key AI technologies in finance and accounting include.

- Robotics process automation or Rule based models, which process information and deliver output or actions based on preset or predefined rules. Mostly do repetitive tasks (ACCA, 2023).
- Machine learning, which refers to algorithms that are developed to recognize patterns in data and make predictions or decisions without human intervention.
- Deep learning, which is a more advanced form of machine learning based on deep neural networks. It can handle larger and more complex datasets. It is used in natural language processing.
- Expert system, a type of AI system that imitates the expert decision making abilities of a specific domain or field. It uses a knowledge base, a decision tree, a set of rules or an inference engine to solve problems.
- Natural Language Processing, a form of AI that enables computers to understand, interpret and generate human language hence facilitating natural communication between people and computers (The Alan Turing Institute, 2023, pp. 9-13).
- Generative AI, a form of AI that can create original content such as text, images, videos, audio or software code in response to a user's prompt or request.

1.3 Research question

In regard to the two topics I have discussed above; AI and the finance and accounting profession, this is the research question for this paper: How has the integration of AI into the workplace impacted the finance and accounting profession, and how can business schools prepare finance and accounting students to thrive in the AI era?

2. LITERATURE REVIEW

2.1. Tech leading the other industries

Over the recent past, especially after the role out of ChatGPT, the use of AI has grown rapidly (World Economic Forum, 2024). AI has cut positions, improved human efficiency, reduced repetitive work, and created jobs (World Economic Forum, 2018). With time, AI is only getting more intelligent. By 2023, AI had outperformed humans on some tasks, but not all tasks. For workers who use AI, it has boosted their productivity and helped them produce better quality work (Stanford University, 2024).

Despite the value that AI is creating, many people are wary that it may take their jobs (CNN Business, 2023). This fear has been exercabated by the recent layoffs in the tech industry. A growing number of companies have cited AI as the reason for the layoffs and rethinking new hires as they try to adapt to the rapid advances in technology (CBS Money watch, 2024). For instance, IBM CEO said that the company was going to pause hiring for positions they think could be replaced by AI but emphasized that AI will create more jobs than it will take away (CNN Business, 2023). Some other major companies that announced massive investments into AI while laying off the workers include Microsoft, Meta, SAP, and Dropbox (CBS Money watch, 2024).

In the shadow of these layoffs, we see that the tech industry is gripped by an AI fervour and is investing heavily in AI talent and technology. Some of the companies are even placing a premium on the employees with AI skills (CNN Business, 2023). According to comprehensive.io, which examines job listings and compensation data, the average salary of software engineers with AI and machine learning skills was 12% higher than those without the skills as of 2023 (Comprensive, 2023). The difference in the compensation is called the AI premium (CNN Business, 2023).

According to Dan Wang, a renowned professor at Columbia Business School, AI does not necessarily replace humans. Instead, it enhances their work (Colombia Business School, 2024). Therefore, the competition will be human specialists getting replaced by human specialists who can take advantage of AI (CNN Business, 2023).

The tech industry in this case is the bellwether for the rest of the industries (CBS Money watch, 2024). In due course, the other industries will follow suit. The tech industry in this case is leading the way for other industries because tech companies are typically at the forefront of AI research and development, driving innovations that other sectors eventually adopt. The tech industry also has many other advantages like investment resources from the major tech companies, more specialized top talent in AI and machine learning, infrastructure like powerful computing, datasets and AI technologies, innovation and applications (Micorsoft Copilot, 2024).

2.2. AI in financial services and other industries

From the agricultural industry using AI to detect soil deficiencies and provide planting recommendations to the ecommerce using it to analyze performance and manage inventory, now than ever before, there is a rally across all industries to take advantage of AI to reduce costs, increase revenues, boost productivity and many other benefits (Adib Bin Rashid, 2024).

To fully unlock this potential, these industries are investing significant proportions of their budget in AI. At the end of May 2024, the industries with the highest budget for AI were as follows: Tech, energy and materials, financial services, media and telecommunication, consumer goods and retail, advanced industries, business and legal and professional services, healthcare and pharmaceuticals and medical products (Mckinsey & Company, 2024). Noteworthy is that the financial services industry is among the top three industries with the highest budget for AI. From the list above, a big percentage of jobs under the business, legal and professional services industry are also under finance and accounting (Indeed, 2024).

According to McKinsey report, the business, legal and professional services industry was the highest in AI adoption (Mckinsey & Company, 2024). This includes people working for organizations focused on human resources, legal services, management consulting, market research, research and development, tax preparation, and training (Mckinsey & Company, 2024). All these confirm the finding by the New York Times that the Tech and the financial services industries are going to be the most impacted by AI (The New York Times, 2024).

To realize the full potential of these investments, the different industries have opened several jobs related to AI. According to Forbes, these are the industries that had the most AI related job openings in their order: Tech leads once again, followed by scientific and professional and technical services, arts and entertainment, financial and insurance services, manufacturing, electricity and energy, public administration and defense, agriculture and forestry, education and other activities. Once again, financial and insurance services are among the top. In this case, some jobs in the second category, i.e., scientific, professional, and technical services fall under finance and accounting (Forbes, 2024).

According to a prediction by Goldman Sachs, AI could do approximately 20% of all fulltime jobs globally or about 300 million fulltime jobs in the big economies, across all industries (IMF, 2024). In the USA, 80% of the workforce could see at least 10% of their jobs automated (OpenAI, 2023). However, most of the roles could be reinvented once their tasks are decomposed into tasks that can be automated (Accenture, 2024). This is in line with the forecasts by the World Economic Forum across 45 economies that AI will displace 83 million jobs and create 69 million jobs by 2028. This shows that despite the reinvention of roles, there will be a net decrease of fourteen million jobs (World Economic Forum, 2023). The International Monetary Fund estimates that by 2025, AI will have affected 60% of all jobs (IMF, 2024).

The least affected jobs are going to be in the industries that deal with more physical and outdoor tasks (Financial Times, 2024). According to a report by Accenture, the average percentage of work likely to be completely automated across all industries is 34%. The industries and functions with more possibilities of automation above this average include

banking, insurance, software platforms, capital markets, energy, communications and media, and retail, respectively. The industries and functions with less possibilities of automation than the average level are health, having the highest, followed by public service, aerospace and defense, automotive, high tech, travel, utilities, life sciences, industrial, consumer goods and services, chemicals, and natural resources respectively. Once more, we see that finance related jobs like banking, insurance, and capital markets are among the top jobs highly exposed to AI (Accenture, 2024).

Normally, financial institutions of all types invest heavily in technology and data way ahead of the other industries to compete effectively (Harvard Business Review, 2024). From the above reports we can conclude that AI will undoubtedly revolutionize finance and accounting. To remain relevant, finance and accounting professionals will have to adapt to the new technology so that they can take advantage of it in their work.

2.3 Impact of AI on finance and accounting jobs.

As we have seen from the previous reports, finance and accounting jobs have higher exposure to AI (Accenture, 2024). One of the key reasons for this is because finance and accounting jobs deal with enormous amounts of data (Deloitte, 2023). One of the key competencies of AI is that it can analyze large data sets very quickly, reveal trends, and enable monitoring and forecasting (Deloitte, 2023). Because of this, it is naturally fit for companies to involve AI to provide efficiency, cut costs, detect fraudulent activities, and keep operations running smoothly (Forbes, 2024).

The impact of automation in finance and accounting depends on the industry as well. As we saw earlier, the professionals who work in some roles like capital markets, banking and insurance are even more exposed (Accenture, 2024). To better see this, let us look at the financial services sector.

Even before the AI race began in 2022, there was the robotic process automation (RPA) campaign in the financial services. Robotic Process Automation refers to a simple software ‘bots’ that can perform repetitive tasks quickly with minimal input (PWC, 2019). RPA technologies are not considered as part of AI, because they do not learn as they go unlike AI models like machine learning (Barclay Simpson, 2019). However, it is considered as the gateway of automation in many companies (PWC, 2019).

Financial services companies rallied to integrate RPA into their operations to free their employees from repetitive, manual, error prone and time consuming tasks such as data entry, document processing, and reporting (Forbes, 2024). This would allow the employees to focus on higher value and more strategic activities. The combination of RPA and AI has made some previous manual tasks like customer identity verification automated. Now, customers can upload their documents virtually, and AI is able to verify the identity with the use of natural language processing, character recognition and the support of RPA (Forbes, 2024). This also makes the process very seamless for the customers.

For roles that require speed and accuracy like trading, AI can analyze vast amounts of financial data and news in real time and provide insights that traders can use to optimize their trading strategies (Forbes, 2024). Another one is the rise of robot advisors to provide investment services and financial planning to customers (American express, 2024). These robots can consider people's spending and saving habits and offer personalized financial advice. The other area where AI is being applied is credit risk management (Forbes, 2024). AI can analyze a wide range of data like social media activity and spending habits to provide a better credit score for customers. These, among other initiatives have enabled banks to tackle the challenges of scale in a way that was previously unachievable without hiring more staff (The Wall Street Journal, 2024).

For the general finance function, some activities like general accounting operations and cash disbursement could be automated 100% (McKinsey & Company, 2018). More than 80% of other activities like revenue management, financial controlling and external reporting, tax, financial planning and analysis, treasury and risk management could also be automated (McKinsey & Company, 2018).

For audit and external relations, only 60% could be done by AI. The only part that could not be automated is business development. This coincides with the ACCA report, which showed that AI will be used across a range of standardized tasks like payables, receivables, general ledger, external accounting and management reporting (ACCA, 2023). As of 2024, 72% of all companies have already started either using or piloting AI in financial reporting (KPMG, 2024) (KPMG, 2024).

In many companies so far, machine learning is being used to execute financial planning and analysis tasks like logistic regression and decision trees for forecasting, analyzing impact of variable changes, and scenario planning. Machine learning is also being applied in auditing for anomaly detection, clustering, random forests for fraud, outlier detection, identification of natural groupings within data, and classification (ACCA, 2023). According to a report by KPMG, 64% of companies are expecting auditors to have a role in evaluating their use of AI in financial reporting, hence provide assurance and attestation over their AI controls (KPMG, 2024). Generative AI is also likely to be used to automatically generate reports, enhance risk assessments using natural language processing, and facilitate scenario modelling and predictive analytics.

To enable the use of AI, companies are shifting their accounting and finance to cloud technologies such as enterprise resource planning (ERP) and enterprise performance management (EPM). These creates an integrated platform where people can collaborate and access data in real time. These systems also pave way for the standardization of processes which is crucial for AI (KPMG, 2021, p. 2).

To make it even better, many companies are now deploying different technologies to work together. Some of the technologies that can be used together include data management technologies, cloud technologies, robotic process automation, digital analytics and delivery technologies, machine learning, natural language processing, cognitive technologies and

blockchain technologies. The combination of these results in extreme automation (KPMG, 2021). Consequently, the labor requirement could be reduced by 70% (KPMG, 2021, p. 2).

2.4 The skills gap

Apart from the likelihood of AI reducing the staff requirements in finance and accounting, there are also other things that we can note from the discussion so far. One of them is that while some jobs are likely to be displaced by AI, other jobs will be changed, and others will be augmented. Other jobs will be created too. For the jobs that will be changed, augmented, or created, people will have to work with AI and other technologies to increase productivity and reduce costs. Many of the AI systems require specialized programming, data analytics, and machine learning skills (The Alan Turing Institute, 2023).

There is also the need for employees who can engineer prompts to get the desired results, recognize potential bias, and confirm the quality and validity of the generated output, and monitor the performance of AI models overtime (Deloitte, 2023). This, however, does not mean that all employees must become experts in AI. AI skills both at technical and application levels are needed (OECD iLibrary, 2023).

Half of all the workers will need to reskill (World Economic Forum, 2020). According to research on OECD countries by OECD iLibrary, 60% of companies are already concerned about the skills gap. Among these companies, 54% are worried about their ability to attract the right talent. To address this gap, many companies are facilitating their employees to reskill, while others are outsourcing AI skills (OECD iLibrary, 2023).

In addition to the technical skills need, the rise of AI has emphasized the need for soft skills. According to the World economic forum, cognitive skills toped the list of the most wanted skills in 2023. The top skills on the rise are creative thinking, analytical thinking, technological literacy, curiosity and lifelong learning, flexibility resilience and agility, systems thinking, AI and big data, motivation and self-awareness, talent management, and service orientation and customer service (World Economic Forum, 2023).

According to AACSB, workers who combine traditional soft skills like the ones mentioned above with technology literacy and other technical skills will be best equipped to meet the expectations (AACSB, 2020). Some of the soft skills he emphasized include ethics, discernment, and an entrepreneurial mindset.

2.5. How Business Schools and Faculties can help bridge this gap

According to Financial times, AI and automation are bringing rapid changes to business and rendering some elements of the traditional business school's curriculum obsolete. In a case of MBAs, the ones that focus on quantitative are at a bigger risk of being replaced by AI than those who develop innately human skills. Therefore, to prepare students for the future, business schools must develop their students' minds and hearts in a way that they have never done before (Financial Times, no date).

Schools need to teach their students an entrepreneurial mindset that allows them to embrace change as an opportunity, because schools cannot predict all the technological advances that

will be there in a student's four decade career. Therefore, soft skills are going to be more important than ever before (Fast Company, 2024). Among the top soft skills that we have already discussed are creative thinking, analytical thinking, curiosity and lifelong learning, flexibility, resilience and agility, motivation and self-awareness, talent management, and service orientation, customer service, ethics, discernment, and an entrepreneurial mindset. Schools should come up with programs that promote emotional quotient and soft skills (Harvard Business School Publishing, 2020).

One of the ways schools can instil these soft skills is by integrating project-based learning and self-paced projects that challenge the students to develop these skills in the curriculum. The teachers can then offer guidance where necessary to the students. Additionally, teachers can also include small group projects in the courses to enable students to build their collaborative and social skills (Resilient Educator, 2016).

The curriculum should adapt to incorporate AI related skills and knowledge (Harvard Business School Publishing, 2020). This could involve introducing new courses focused on AI in accounting and finance or integrating AI concepts into existing coursework (IFAC, 2024). Some of the new courses could be prompt engineering for finance and accounting, introduction to AI for finance and accounting, Machine Learning for Financial Analysis, Deep Learning in Finance, Data Science for Finance, Natural Language Processing for Financial Text Mining, and Ethical and Regulatory Issues in AI Finance (Krause, 2023, p. 6).

They could also integrate AI into existing courses. For instance, some courses like Financial Modelling and Forecasting should have a greater focus on integrating AI techniques into financial modelling and forecasting processes, including time series analysis, predictive modelling, and risk assessment (Krause, 2023, pp. 7-8).

Business Schools can also come up with programs for practical application of the knowledge students learn about AI (Harvard Business School Publishing, 2020). Some of these programs could be case studies, hands on projects that require students to apply AI skills, simulation exercises, and industry collaborations like guest lectures and workshops. They can also encourage students to take research projects related to AI (Krause, 2023).

To prepare all finance and accounting students for further possibilities about AI in their career, business schools can teach basic level skills in these tools: Data mining and preparation using SQL, Spark, Hadoop or any other language. Creating a data visualization using PowerBI, Tableau or Orange. Statistical modelling and machine learning and deep learning algorithms using Python or R (Harvard Business School Publishing, 2020).

3.. RESEARCH METHODOLOGY

As we have seen so far, the finance and accounting profession will be hugely impacted by AI. Some of the positions will be completely displaced, while others will be partially or entirely changed. New roles will be created too. This research therefore examines how AI is impacting the finance and accounting profession, whether the current finance and accounting students

feel that their schools are preparing them enough to thrive in the AI era, and what business schools can do to better prepare their finance and accounting students to thrive in the air driven workplace.

The research methods used include both primary and secondary data collection. I chose to include the primary data collection in order to get the findings that are as accurate, relevant, and up to date as possible. To get this, I used a survey. The survey had 25 questions, which included 20 quantitative and 5 qualitative or open ended questions. The quantitative question types were multiple choice, Likert scale, rating scale, and odd one out. I chose these quantitative question types because they are easy to understand, and many respondents feel that they require less time and efforts to fill. I also chose to include the open-ended questions for topics that could have too many options and vary greatly from one person to another in order to get deeper thoughts, opinions, and feelings.

The questions were divided into the following sections: Demographics, usage of AI, AI skills assessment, curriculum and course feedback, extra curricula AI skills development and resources. The survey was distributed in finance and accounting students' social media groups on WhatsApp and Facebook. To encourage more responses, there was a draw, where three randomly selected students worn cash prizes of 15.000 Huf, 10.000 Huf, and 5.000 Huf, respectively.

The survey got a total of 111 responses. Out of these, 104 were students doing accounting and finance. I managed to get responses from Budapest Business School (36), Eötvös Loránd University (60), and Corvinus University of Budapest (8). For the respondents, 88% are doing bachelor's degree, 9% doing PhD, and 3% are masters students. Regarding the year of study, 43% of the respondents are in fourth year, 25% in their third year, 18.8% in second year, and 12.5% in first year. In terms of gender, 56.3% of the respondents were females, while 43.8% of the respondents were males.

I used secondary data and findings from credible websites like Google scholar, reports and articles published by reputable companies and organizations such as the World Economic Forum and Harvard Business Review to compare with my findings. This was important to make deeper sense of the findings I got.

In order to also get the realities in the corporate world, I sent the questions of the survey that were not specific to students to two financial professionals and interviewed two other financial professionals working in some of the reputable financial companies. The companies they work for are Citi bank, Morgan Stanley, Tata financial consultancy services, and BlackRock. They requested for anonymity in the survey. One female and one male filled the questionnaire, while I interviewed one female and one male.

To clean the data and remove the respondents who are not finance and accounting students, I used Microsoft excel. I also used Microsoft excel to make the charts for better understanding of the results.

Some of the challenges included: a narrow scope of respondents. Focusing on finance and accounting students only made the target audience too specific. Another challenge was in

getting the respondents, because I am not in an accounting faculty myself. I had to rely on friends to post the link in their groups. Another thing was that many respondents did not prefer to answer the open ended questions. To not discourage them, I made the open ended questions optional.

The hypothesis for this research included:

1. A significant proportion of finance and accounting students are already utilizing AI in their academic, jobs and personal activities.
2. A significant proportion of finance and accounting students are concerned that advancements in AI may lead to job displacement in their future careers.
3. To remain competitive in the job market, finance and accounting students are increasingly enrolling in AI related courses outside their formal school curriculum.
4. Students perceive significant gaps in their current curriculum regarding AI and they suggest incorporating more practical AI related courses and industry collaborations.
5. Most of the educational institutions are incorporating AI-related courses into their curricula to better equip finance and accounting students with the skills needed to thrive in an AI-driven industry.

4. RESEARCH RESULTS

4.1 AI usage among finance and accounting students.

AI is becoming a part of almost every part of our daily lives (Harvard Business Review, 2019). And as everybody else is embracing AI, the finance and accounting students are no exception. In this part, I sought to understand how much the students are exposed to AI in not just their studies, but also at work for those who are already working, and also at their personal lives. According to the responses I got, 99% of the students said that they are already using different forms of AI. This is way above the global average of students' usage of AI, which stands at 62% as at Aprill this year (Microsoft, 2024).

When it comes to how frequently they use AI, 15.6% of the students said that they use it always or daily. According to another research done by Harvard graduate school of education for students aged between 14 and 22, only 4% said that they use AI daily (Harvard Graduate School of Education, 2024). This once again confirms that the finance and accounting students in Hungary are using AI above average.

According to my survey again, 46.9% of the students said that though they do not use AI daily, they use it often, or at least several times a week. From this, we can deduce that at least 62.5% of the students use AI several times a week. From the remaining students, 34.4% said that they use AI once a week or a few times per month. This shows that at least 97% of students use AI many times in a month. Only 3% of the students said that they rarely use AI, that is, they use it once per month or less.

To get as many forms of AI that these students use as possible, I gave them an open ended question. Them most used is ChatGPT, followed by Microsoft Copilot and Gemini. The other

forms they use include Snapchat AI, OpenArt, Cariyon, Suno, POE, Bing, QuillBot, Grammarly AI, Magic school and Deepl. Many of those who work also use AI at their work. Some are even using financial and accounting specific AI systems. Some of the forms they gave are AlphaSense, DataRobot and Kensho. Some of the students were cautious not to state their companies' AI system because of privacy.

One interesting question is the purpose for which the students use AI. There are several things that students use AI to do. Due to the current rise of AI, among the areas we would expect the applications of AI is school and work. However, students have gone a notch higher, using AI even for other personal activities.

As shown on Figure 1, 50% of the finance and accounting students who responded said that they use AI for all the three options give. That is for doing schoolwork, for job related tasks for instance in their internships, and for personal use. A further 19% of the students said that they use AI for schoolwork and personal use. In total, 69% of the students use AI for both personal use and schoolwork. Further, 15% of the students said that they only use AI for schoolwork only. This indicates that at least 84% of the students are using AI in their schoolwork in one way or the other.

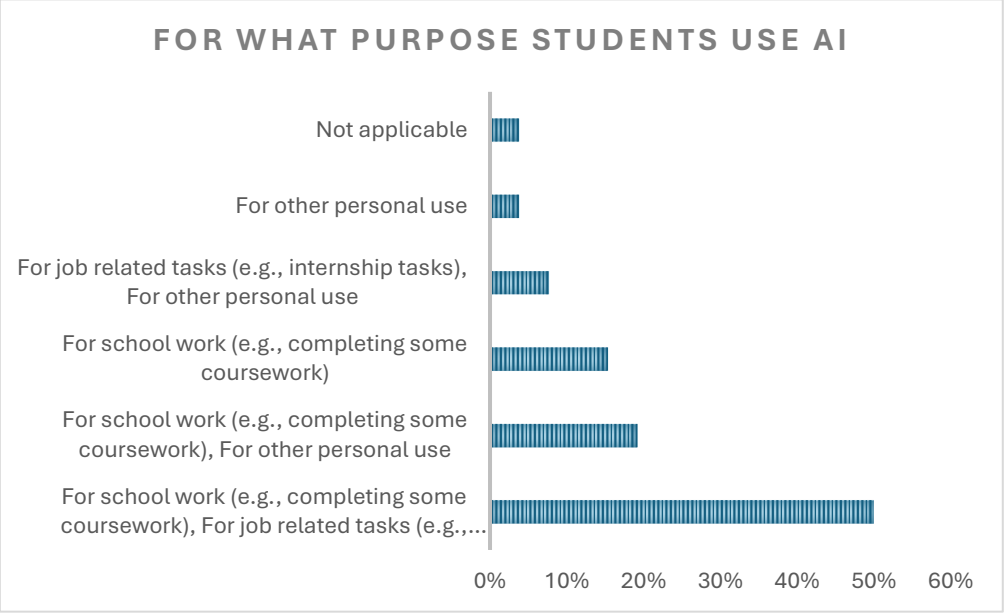

Figure 1. For what purpose students use AI (Source: Own calculation based on the survey)

In this case, many educators have been afraid that students use AI to cheat. According to the Harvard research, it is true that students cheat using AI. However, students can use AI to do other things like generating practice questions as they prepare for exams, brainstorming, generating summaries for topics and some course work, checking the correctness of their writings to improve expression, and many more (Monash University, no date).

Another 8% said that they use AI for job related tasks and personal use. This brings the percentage of the students who use AI at their job to 58%. One of the factors here could be

that some of the students have not found jobs yet. Some of the students also do physical jobs, where they cannot use AI. No student said that they use AI for job related tasks only.

Only 4% of the students said that they use AI exclusively for personal use. This brings the percentage of students using AI in their personal lives to 81%. When it comes personal use, some people use AI to get information, brainstorm, for fun and creativity, making and editing pictures, sounds or music, writing codes, and many others (Harvard Graduate School of Education, 2024).

From these findings, it is clear that finance and accounting students are already exposed to AI in many ways. Therefore, we can conclude that the hypothesis statement that a significant proportion of finance and accounting students are already utilizing AI in their academic, jobs and personal activities is true.

> The high usage of AI among students is very important because as we saw, many companies are already using AI in finance and accounting tasks. To confirm this, three out of four of the finance professionals who participated on the research said that They are already using AI in their jobs.

4.2 AI skills assessment among finance and accounting students

Now that we know how much and for what purpose students use AI, let's check how skilled they are. I started with technical skills. To get this, I asked them about some of the skills that are recommended by Krause, an Emeritus Professor of Finance at Marquette University (Krause, 2023), and Harvard Business School Publishing (Harvard Business School Publishing, 2020). The options given were programming in python or R, coding with SQL or any othe language, visualization with powerBI or Tableau or any other tool, machine learning, data analysis, prompt engineering for finance and accounting, and the last option was none for those who didn't have any of the skills listed.

19% of the students said that they don't have any of the above mentioned skills. Many students had either one or a combinition of the skills. For those with only one of the skills, data analysis was the most common at 23%. The other single skills that people had were coding with SQL or any other language at 4%, programming in python or R at 4% and visualization with powerBI, tableau or other tools at 4%. As for the combination of two or more of the above mentioned skills, visualization with powerBI, tableau or other tools and data analysis were at the top at 12%. The other common combinations were:

a. Coding and data analysis.
b. Coding, visualization with powerBI, tableau or other tools, and data analysis.
c. Data analysis and prompt engineering for finance and accounting.
d. Machine learning and data analysis.

e. Programming, coding, visualization with powerBI, tableau or other tools, and data analysis.
f. Python and data analysis.
g. Python, visualization with powerBI, tableau or other tools, and data analysis.
h. visualization with powerBI, tableau or other tools, data analyis and prompt engineering for finance and accounting.
i. visualization with powerBI, tableau or other tools, machine learning and data analysis.

Considering both those who have one skill and those with multiple skills, the survey reveals that 71% of the finance and accounting students believe that they have data analysis skills. This is followed by Visualization with powerBI, tableau and other tools at 36%, programming in python, R or any other language at 16%, coding with SQL or any other language at 16%, prompt engineering at 8%, and machine learning at 8%.

As discussed earlier, the rise of AI has made soft skills even more important. They cannot be easily replaced by AI. To get a glimpse of how important the students think some skills will be, I asked them to rate the following skills on a scale of 1-5: programming in python or R, coding with SQL or any other language, Visualization with powerBI, tableau or other tools, machine learning, data analysis, prompt engineering for finance and accounting, analytical thinking, creative thinking, technological literacy, big data knowledge, ethics and integrity, and interpersonal skills. 1 is for the skills that are not important at all, and 5 is for the extremely important skills. I added some of the most demand soft skills according to the World Economic Forum (World Economic Forum, 2023) and Wharton Business School (Financial Times, no date).

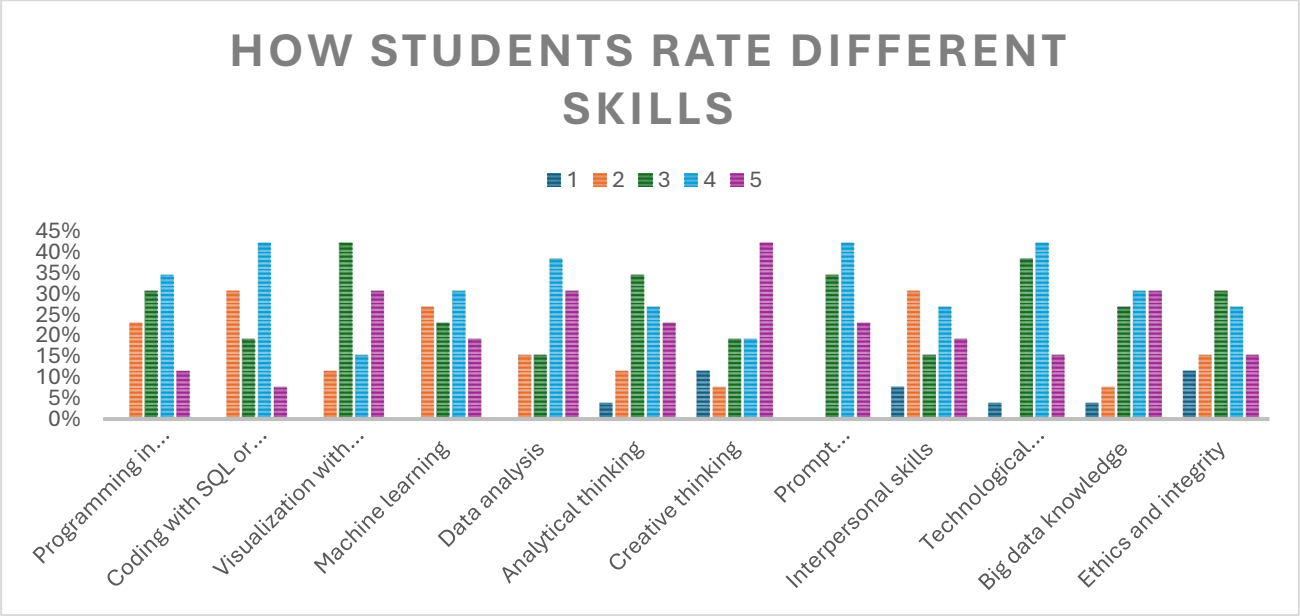

Figure 2. How students rate different skills on a scale of 1-5. 1 stand for not important at all, and 5 stand for extremely important (Source: Own calculation based on the survey).

As shown in *Figure 2,* creative thinking was rated by majority of the students as extremely important (5), followed by data analysis and big data knowledge. On the flip side, most of the students rated interpersonal skills and integrity as not important at all. This is nearly the opposite of the emphasis on integrity and ethics by Wharton Business School (Financial Times, no date) and the AACSB (Association to Advance Collegiate Schools of Business) (AACSB, 2020). They argue that integrity and ethics will be important to address the concerns around AI like intellectual property rights, data privacy and security, discrimination, products liability, trust, and identity (Accenture, 2024).

Overall, the students ranked the skills from the extremely important to the least important as follows: Prompt engineering for finance and accounting, data analysis, technological literacy, big data knowledge, creative thinking, visualization with powerBI, tableau and other tools, analytical thinking, machine learning, programming with python or R, coding with SQL or any other language, ethics and integrity, and interpersonal skills. This was calculated using the weighted average formula.

This is slightly different from the professionals, who chose the skills in the following order of importance: technological literacy, programming in python or R, machine learning, big data knowledge, prompt engineering for finance and accounting, data analysis, coding with SQL or any other language, visualization with powerBI, tableau or any other tool, analytical thinking, integrity and ethics, interpersonal skills, and creative thinking. From both samples, it is clear that integrity and interpersonal skills are not seen as very important.

As we saw before, AI will mostly take over repetitive and standardized tasks. So, I added the option of repetitive tasks execution and asked the students to choose the odd one out. Surprisingly, only 23% chose repetitive tasks execution as the least important. 27% chose interpersonal skills and another 23% chose integrity and ethics. Once again, it became clear that the current finance and accounting students do not feel that having integrity and ethics will make a significant difference in the error of AI. Three of the professionals chose repetitive tasks execution as the odd one out, and one chose analytical thinking.

When asked what important skills they felt that they were missing, most of the students mentioned programming and coding. Some of the other skills that the students said they were missing were critical thinking, statistical analysis, the ability to interpret data and derive actionable insights, how to use AI tools, visualization skills, creative thinking, interpersonal skills, and time management.

According to the OECD iLibrary, approximately 63% of finance professionals are worried to some extent about AI taking their jobs in the next ten years, and 33 are not worried at all (OECD iLibrary, 2023, p. 46). I asked the same question to gauge whether the students are already worried about AI impacting job opportunities in finance and accounting. The choices were as follows: not at all worried, slightly worried, moderately worried, very worried, and extremely worried. 15.6% of the students said that they are very worried, 31.3% are moderately worried, and 28.1% are slightly worried. This puts the total percentage of students

who are worried to some extent about AI to 75%. That is slightly higher than what OECD library found among the professionals. Only 25% of the students said that they are not worried at all. This confirms the hypothesis that a significant proportion of finance and accounting students are concerned that advancements in AI may lead to job displacement in their future careers.

4.3 Feedback from finance and accounting students on the current curriculum.

Considering significant role AI is going to play in the finance and accounting profession, I asked the students if they feel that their schools are preparing them well with the relevant skills to thrive in this era. The options I gave them were as follows: Not at all prepared, slightly prepared, moderately prepared, and well prepared.

As *Figure 3* shows, 54% of the students said that they feel their schools are only slightly preparing them to be job ready in the era of AI. A further 12% said that their schools are moderately preparing them to succeed in the era of AI. Shockingly, not even a single student said that their school is preparing them well enough for the AI era. Actually, 35% of the students said that their schools are not at all preparing them for AI as *Figure 3* shows. From the student's perspective, therefore, the schools' rate of adaptation to AI is below average.

When asked whether their schools teach AI courses to finance and accounting students, 59.4% of the respondents said no. A further 28.1% said that they do not know. Only 12.5% of the students said that they were sure their schools are teaching AI related courses to finance and accounting students. Some of the students who chose yes said that their schools were teaching courses like introduction to AI for finance and accounting. When asked how effective the current AI courses in their schools were, 40% of the students said the courses were not effective at all. A further 36% of students chose slightly effective, while 24% chose moderately effective. No student chose very effective or extremely effective. One of the reasons for the low score here could be that these students do not know any AI related courses in their school as discussed earlier. Consequently, when asked how effective AI courses are, they just choose not effective at all.

The next question I asked students was what AI related courses they would like to see added in their curriculum. I gave them the following options: introduction to AI in accounting and finance, machine learning for finance and accounting, deep learning for finance and accounting, ethical and regulatory issues in AI, natural language processing for finance and accounting, and prompt engineering for finance and accounting.

From the above options, the most selected course suggestions were introduction to AI for finance and accounting at 75%, followed by machine learning for finance and accounting at 59.4%, machine learning for finance and accounting at 43.8%, prompt engineering for finance and accounting at 40.6%, natural language processing for finance and accounting at 37.5%, and ethical and regulatory issues in AI for finance and accounting at 31.3%.

From the above options, the most selected course suggestions were introduction to AI for finance and accounting at 75%, followed by machine learning for finance and accounting at

59.4%, machine learning for finance and accounting at 43.8%, prompt engineering for finance and accounting at 40.6%, natural language processing for finance and accounting at 37.5%, and ethical and regulatory issues in AI for finance and accounting at 31.3%.

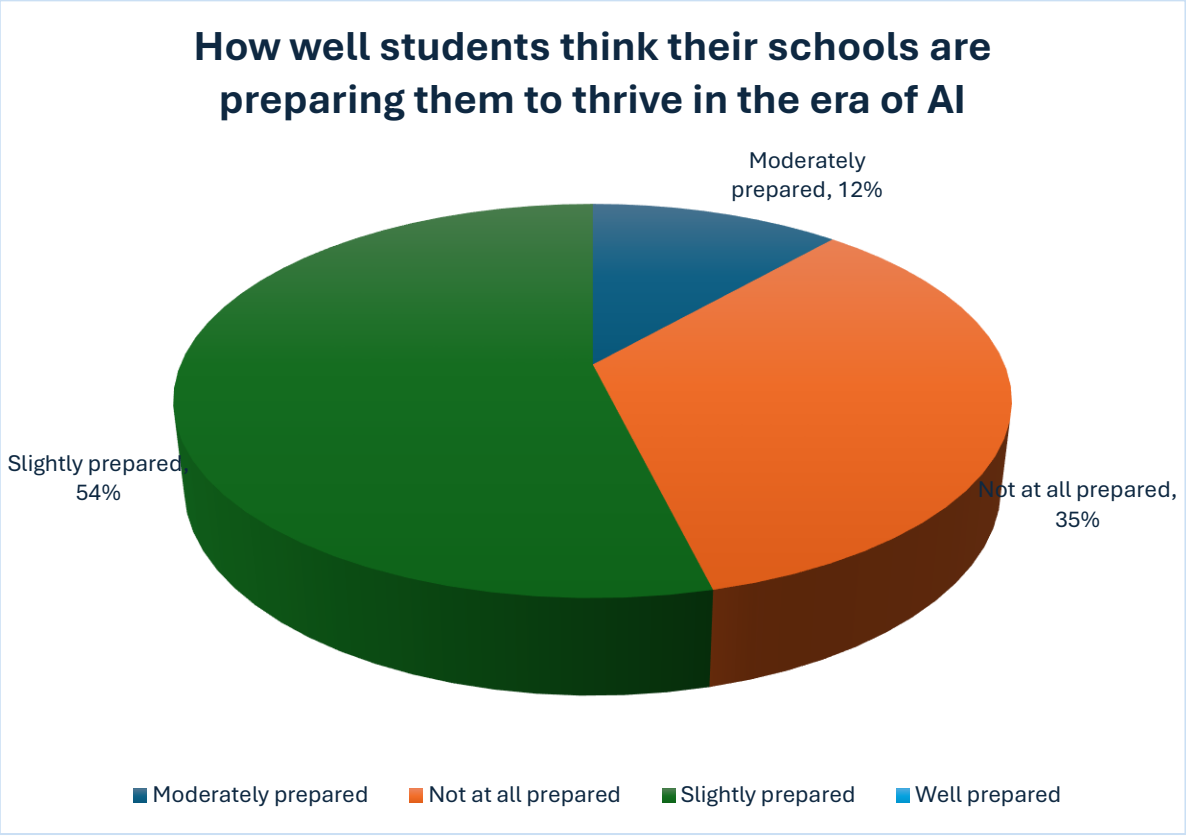

Figure 3. How well students think their schools are preparing them to thrive in the era of AI (Source: own calculation based on the survey).

Besides the options I had given the students above, I asked them what gaps they perceived and what improvements they would suggest for their schools' curricula to better prepare students for the AI driven job market. Most of the students emphasized that the schools should start teaching AI related classes especially prompt engineering, programming, machine learning, data analysis, and statistics. Some said that their teachers have been discouraging them from using AI in their coursework, yet they are encouraged to use it at their workplace. They feel teachers should come up with ways that allow them to use AI in their coursework. Some students feel that their classes are too theoretical, and it would be better if the teachers could use more practical approaches by giving them hands-on projects related to AI applications. Othe proposals from the students include updating courses to have the latest trends, hiring professionals with expertise in AI for finance, and collaborating with companies that are already using AI.

As one of the students suggested, many schools have been collaborating with companies in different industries already. Since this is recommended as one of the most effective ways of

preparing students in the era of AI (Harvard Business School Publishing, 2020), I decided to ask for students' feedback on the same. The options I gave the students were as follows: not effective at all, slightly effective, moderately effective, very effective, and extremely effective.

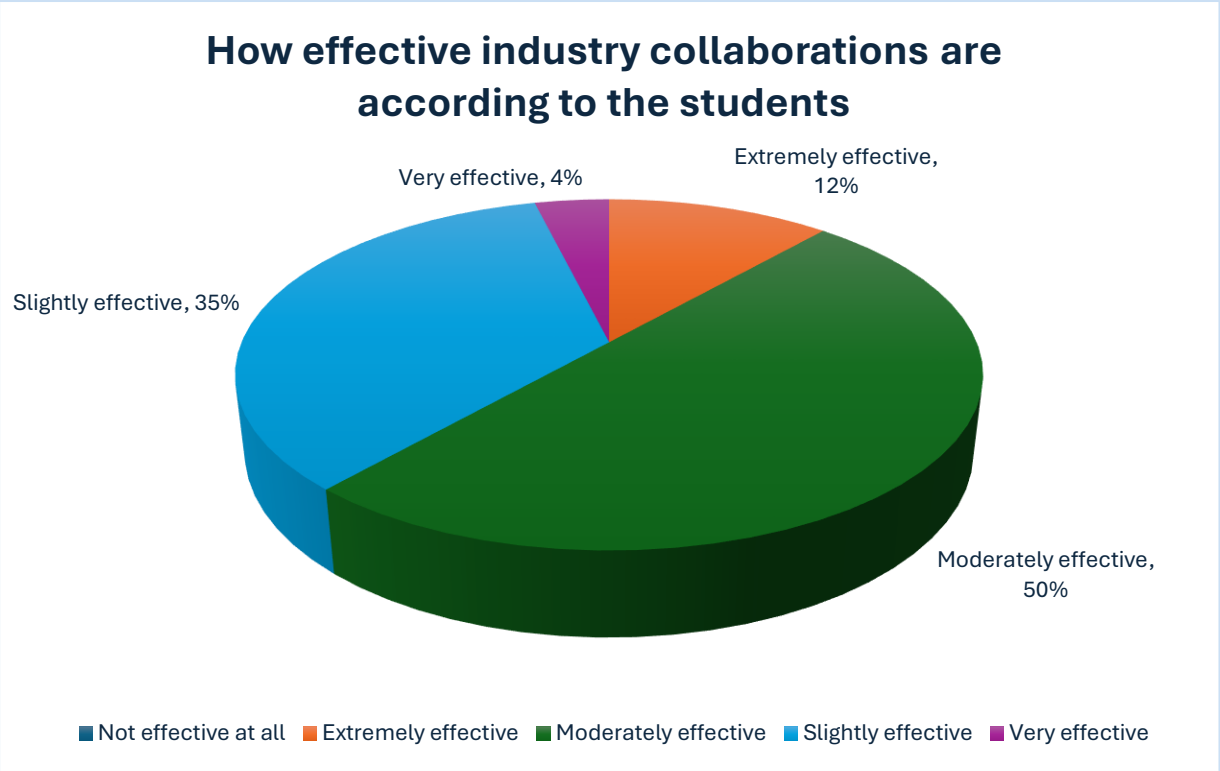

Figure 4. How effective industry collaborations are according to the students (Source: own calculation based on the survey).

As shown in the *Figure 4,* 50% of the students said that they are moderately effective, while 35% said that they are slightly effective. A further 4% said that they are very effective, and 12% said that they are extremely effective. Considering the dismal ratings that the students gave the AI programs in their schools, this can be considered to be a good rating. Therefore, it is recommended.

From the findings on this section, the hypothesis that students perceive significant gaps in their current curriculum regarding AI and they suggest incorporating more practical AI related courses and industry collaborations is confirmed. On the other hand, the hypothesis that most of the educational institutions are incorporating AI related courses into their curricula to better equip finance and accounting students with the skills needed to thrive in an AI driven industry is not true.

4.4 Extra curricula skills development and resources

So far, we have found that many students acknowledge that they are lacking some very important skills. Additionally, according to the information so far, they don't feel like what

they are learning in the classrooms is enough to thrive in the age of AI. In this section, we try to find out how they are bridging this gap.

The first question I asked in this section was how proactive the students were in developing AI related skills. The options given were as follows: not at all proactive, slightly proactive, moderately proactive, very proactive, and extremely proactive.

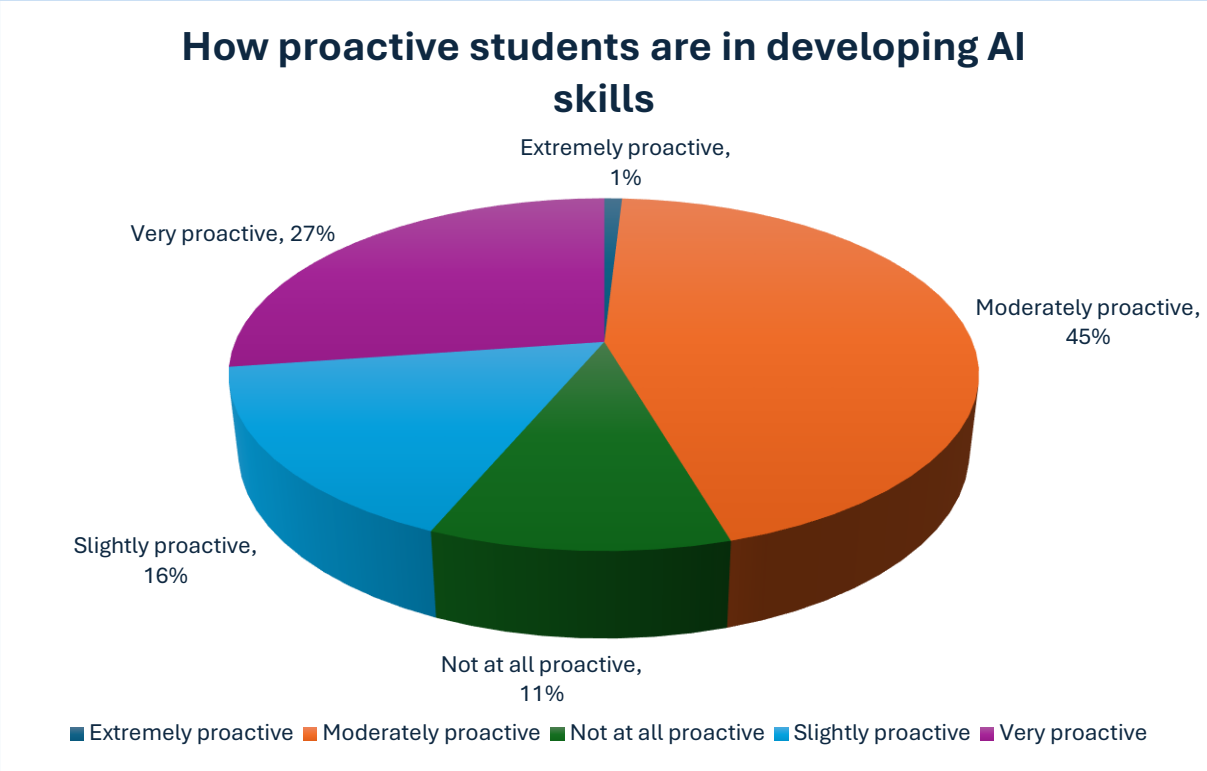

Figure 5. How proactive students are in developing AI skills (Source: own calculations based on the survey).

The first question I asked in this section was how proactive the students were in developing AI related skills. The options given were as follows: not at all proactive, slightly proactive, moderately proactive, very proactive, and extremely proactive.

As *Figure 5* shows, 45% of the students said that they are moderately proactive, while 16% said that they are slightly proactive. A further 27% said that they are very proactive, while 1% said that they are extremely proactive. Only 11% said that they are not proactive at all. Based on these findings, we can therefore conclude that 89% of all finance and accounting students are proactive in one way or the other in developing AI skills.

The next question would be what platforms they use to learn these skills. The options I gave were as follows: Online courses e.g., Coursera, workshops and seminars, books and research papers, internships and practical experiences, mentorship programs, university resources e.g., library, not applicable and I do not learn it.

The most common platform that the students have been using so far is online courses platforms like Coursera, with 68.8% of the respondents using it. The other popular platforms are internships and practical experience at 31.3%, workshops and seminars at 31.3% as well, and books and research papers at 25%. The other options were rated as follows: university resources e.g. the library at 12.5%, mentorship programs at 9.4%, I do not learn it at 3.1%, and not applicable at 3.1 percent.

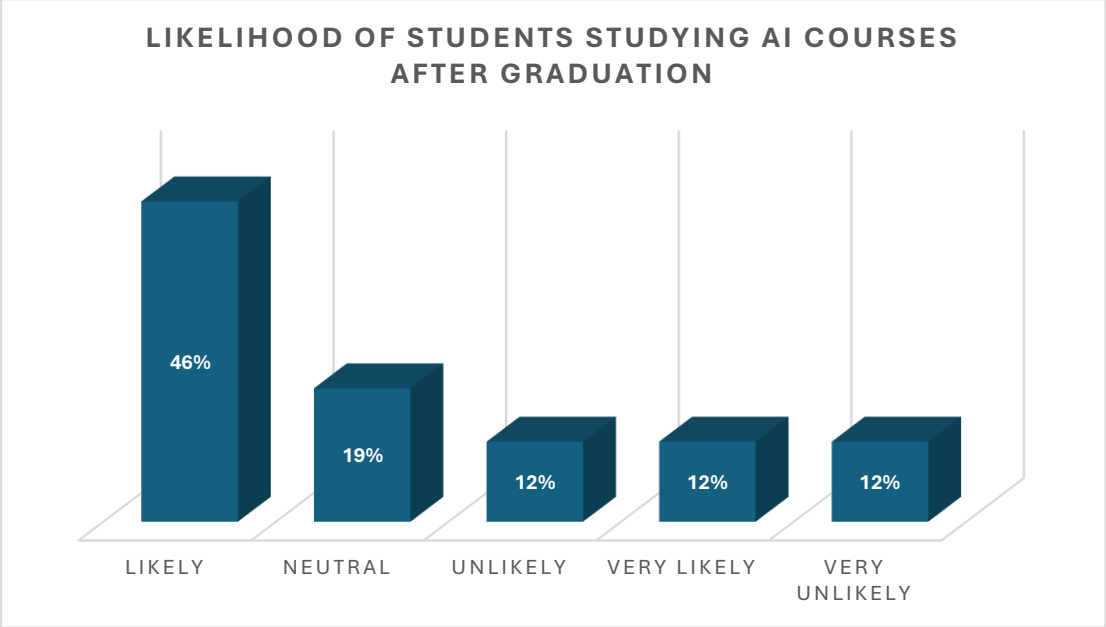

Figure 6.Likelihood of students studying ai courses after graduation (Source: own calculations based on the survey).

When I asked whether they were planning to study AI related courses after graduation, 46% of the students said that they were likely to study AI courses even after graduating as shown on *Figure 6*. A further 12% of the students said that they were very likely to study AI related courses after university. This brings a total of the students thinking of studying more about AI after graduation to 58%. The remaining students said the following: 19% said that they were neutral, 12% said they were unlikely, and a further 12% said that they were very unlikely to study AI related courses after graduation.

4.5 Reality check with the finance professionals

Among the finance professionals that participated in the survey, three are already working with AI. Only one has not worked with AI so far. Due to privacy concerns in the companies they work for, I did not ask them to give the different forms of AI they use. For the three who are already using AI, they say that so far AI has helped them to save time, reduce operational risks, and improve the quality of the work they do. This confirms the findings in the literature

review that most of the financial services companies are using AI. Most of these benefits they mentioned are already among the findings in the research review.

For instance, one said that he has been putting invoice numbers manually in the past, but recently he started working with a system that could observe the database from which he gets the invoice numbers and where he puts them. After a while, this system is able to learn and start putting the invoice numbers by itself. So, he starts monitoring the system as it does the work. He also used to write a lot of reports, which would consume a lot of time. However, nowadays he uses AI to write reports, and then he proofreads. Sometimes, he says, AI gives the wrong information. So, he validates all the output that comes from it and corrects it where possible.

All the three professionals that have used AI so far are worried to some extent about it taking their jobs. Two said that they are moderately worried, and one said that they are slightly worried. The one who has not started using AI yet, said that she is not worried at all. However, she is looking forward to using it sometime. She believes that once she starts using it, her job will become easier, and that she can focus on higher activities.

As for the skills that are going to be relevant, their aggregate vote orders them in as follows, from the most important to the least important: technological literacy, programming in python or R, machine learning, big data knowledge, prompt engineering for finance and accounting, data analysis, coding with SQL or any other language, visualization with powerBI, tableau or any other tool, analytical thinking, integrity and ethics, interpersonal skills, and creative thinking. When I introduced the repetitive tasks execution and asked them for the odd one out, three of them chose repetitive manual execution. This is also in line with the findings that AI will take over most of the repetitive tasks.

When I asked them of the steps they think are important for finance professionals to stay relevant, they emphasized the need to stay updated on the technological advancements, incorporate data skills in ones skillset, staying up to data with the accounting standards as they keep evolving, doing the best possible to be as IT literate as possible, and understanding how to use AI and correct it’s mistakes.

When I asked what they would suggest for schools to better prepare students for this age, the most common suggestios were as follows: schools should know that technology will keep changing, hence the best is to instill in the students those skills that can never be replaced by AI. Another suggestion was to teach all finance and accounting students some foundational level skills in programming and coding, how to think outside the box, and how to interpret the output of AI and integrate it with reality.

As to how proactive they are in developing AI skills, one said that she is not proactive, another one said that she was moderately proactive, the other one very proactive, and the one said that he is extremely proactive. Most of them are learning AI from their companies’ websites. This also confirms the finding in the literature review that to bridge the skills gap,

many companies have opted to facilitate their employees to learn AI. Two of them also said that they are using linkedin learning. One said that he uses Datacamp as well.

5. RECOMMENDATIONS

Based on all the findings that we have so far, it is apparent that different players have key roles to play in making the adoption of AI a success in finance and accounting. From the employers to the employees, to business schools, and the students themselves, each party must play their part. The biggest focus on this recommendation part will be dedicated to the business schools, due to the critical role they play in preparing the students for the job market.

To begin with, business schools and faculties should consider adding artificial intelligence courses in the curriculum. This is imperative to familiarize the students with AI tools before they actually go to the job market where these skills are likely to be critical. On top of the list is Introduction to AI for finance and accounting and Prompt engineering for finance and accounting. There are many others as we have already discussed. Each school can adapt as they deem fit. These subjects can be added to the obligatory or elective categories to ensure that as many students as possible can learn them.

Business schools can update some of the courses that already exist to incorporate AI. This is important to ensure that the students get the most relevant knowledge and skills in this era. For instance, they can update financial modelling and forecasting to focus on integrating AI in financial modelling and forecasting.

Additionally, business schools can teach the finance and accounting students basic level skills for data analysis and tools used like python, SQL, PowerBI and others. This lays a great foundation for those who may want to specialize dig deeper into how these tools are used in finance and accounting.

The business schools should also focus on practical learning. To achieve this, schools can incorporate practical applications of artificial intelligence or the soft skills they intend to teach through hands on projects, case studies, simulation exercises and industry collaborations. This will help the students to see what they learn in real world scenarios.

Another step would be to promote the development of soft skills. The schools can come up with ways to challenge the students to develop some of most in demand soft skills like analytical thinking, and creative thinking. The best way so far is through both project based learning, self-paced individual projects, and group projects. The teachers can then provide guidance and ensure that the students do these projects in a manner that brings these skills out.

Business Schools should also come up with policies to let students use artificial intelligence in the course work, instead of banning it. This is because apart from cheating, there other

creative ways that AI could be used. This could boost productivity for both the teachers and students.

Finally, schools should focus try collaborating with industries and companies as much as possible. Apart from being recommended as one of the most effective ways of teaching, the survey shows that the students are also in support of it.

For students and finance professionals, continuous learning and upskilling is paramount to stay relevant. Other recommendations include adopting the current AI tools being used in the industry, develop technical skills in data analysis and if possible, some coding, programming, and visualizations, look for ways to harness analytical thinking, creative thinking and other important soft skills, learn how to use AI in an ethical manner.

6. SUMMARY

AI Technologies in Finance AI technologies are being used for various applications, including fraud detection, credit risk management, trading strategies, and customer service automation. For example, AI can analyse large quantities of financial data and news in real-time, providing insights that traders can use to optimize their transactions. AI-powered chatbots and virtual assistants handle customer inquiries, providing quick and accurate responses.

This study examines how artificial intelligence (AI) is revolutionizing the accounting and finance industries. It looks at how AI is changing the finance sector, what professionals need to know to succeed in an AI-driven workplace, and how schools are training the next generation of professionals.

Overview: AI developments are causing major changes in the accounting and finance industries. Accounting professionals concentrate on documenting and reporting financial activities, whereas finance experts oversee funds and investments. By automating repetitive processes, offering predicting insights, and facilitating complex data analysis, artificial intelligence (AI) technologies including robotic process automation (RPA), machine learning, deep learning, expert systems, natural language processing (NLP), and generative AI are transforming these domains.

Artificial Intelligence in Finance: Applications of AI technologies include trading techniques, credit risk management, fraud detection, and automated customer support. AI, for instance, is able to analyse enormous volumes of news and financial data in real time, giving traders insights they may utilize to improve their tactics. Chatbots and virtual assistants driven by AI respond to consumer questions with promptness and precision.

Effect on Employment and Competencies: There are benefits and drawbacks to the use of AI in finance. AI raises concerns about job displacement even while it increases productivity and lowers expenses. Professionals in finance need to adapt by learning new skills, especially in data analytics and artificial intelligence. To thrive in an AI-driven workplace, the study

emphasizes the value of both soft skills (such creativity and ethical decision-making) and technical abilities (like programming and data analysis).

The Function of Educational Institutions: Future financial professionals are prepared in large part by educational institutions. The report suggests adding AI-related courses to the curriculum, fostering the growth of soft skills, and placing an emphasis on real-world learning through business partnerships and practical projects. It is also advised that the curriculum be updated frequently to take into account the most recent developments in artificial intelligence.

Results of the Survey: According to a survey, ChatGPT, Microsoft Copilot, and Gemini are among the AI products that finance and accounting students use the most. Although they believe that their current education does not sufficiently educate them for the AI future, students acknowledge the significance of AI skills. According to the poll, there is a sizable skills gap and a need for more hands-on AI-related education and business partnerships.

Suggestions: The report offers financial experts, and educational institutions practical suggestions. These include incorporating courses on artificial intelligence, placing a strong emphasis on hands-on learning, upgrading curricula often, and encouraging the development of soft skills. The development of both technical and soft skills, adoption of AI tools, emphasis on high-value tasks, and ongoing learning and upskilling are all recommended for finance professionals. It is recommended that organizations fund AI training initiatives, use AI to boost productivity, foster creativity, work with academic institutions, and keep an eye on AI advancements.

In conclusion AI is transforming the accounting and finance industries. Finance professionals need to consistently improve their abilities and adjust to new technology in order to stay relevant. Because they give students the knowledge and skills they need to succeed in the AI era, educational institutions are essential to this shift.

References

AACSB, 2020. *The Impact of Artificial Intelligence in Business Education*. [Online]
Available at: https://www.aacsb.edu/insights/articles/2020/02/impact-of-artificial-intelligence-in-business-education
[Accessed 1 November 2024].

ACCA, 2023. *AI (ARTIFICIAL INTELLIGENCE) IN THE FINANCE PROFESSION*. [Online]
Available at: https://www.accaglobal.com/content/dam/ACCA_Global/professional-insights/QuickguidetoAI/PI-AI-ACCA-POSITION%20v2.pdf
[Accessed 31 October 2024].

ACCA, 2024. *Your accountancy career: sectors, industries & roles*. [Online]
Available at: https://www.accaglobal.com/gb/en/study-with-acca/your-career/sectors-industries-roles.html
[Accessed 31 October 2024].

Accenture, 2024. *A new era of generative AI for everyone*. [Online]
Available at: https://www.accenture.com/content/dam/accenture/final/accenture-com/document/Accenture-A-New-Era-of-Generative-AI-for-Everyone.pdf
[Accessed 30 October 2024].

Adib Bin Rashid, M. A. K. K., 2024. AI revolutionizing industries worldwide: A comprehensive overview of its diverse applications. *ScienceDirect,* 27 August.

American express, 2024. *Robo-Advisors vs. Financial Advisors: How Are They Different?*. [Online]
Available at: https://www.americanexpress.com/en-us/credit-cards/credit-intel/robo-advisors-vs-financial-advisors/?linknav=us-creditintel-click-article_link-RoboAdvisorsVsFinancialAdvisors
[Accessed 31 October 2024].

Barclay Simpson, 2019. *By the numbers: how automation is affecting financial services jobs*. [Online]
Available at: https://www.barclaysimpson.com/by-the-numbers-how-automation-is-affecting-financial-services-jobs/
[Accessed 31 October 2024].

CBS Money watch, 2024. *Tech companies are slashing thousands of jobs as they pivot toward AI*. [Online]
Available at: https://www.cbsnews.com/news/tech-layoffs-artificial-intelligence-ai-chatgpt/
[Accessed 29 October 2024].

CFA Institute, 2024. *Career paths and benefits*. [Online]
Available at: https://www.cfainstitute.org/programs/cfa-program#career-paths
[Accessed 31 October 2024].

CNN Business, 2023. *AI is already linked to layoffs in the industry that created it*. [Online]
Available at: https://edition.cnn.com/2023/07/04/tech/ai-tech-layoffs/index.html
[Accessed 29 October 2024].

Colombia Business School, 2024. *The Implications of AI on the Future of Education & Work: An MBA Perspective*. [Online]
Available at: https://business.columbia.edu/insights/digital-future/implications-ai-future-education-work-mba-perspective
[Accessed 29 October 2024].

Comprensive, 2023. *Comprensive*. [Online]
Available at: https://www.comprehensive.io/
[Accessed 29 October 2024].

Deloitte, 2023. *The implications of generative AI in Finance*. [Online]
[Accessed 31 October 2024].

Fast Company, 2024. *4 ways business schools can prepare students to work in an AI-fueled future*. [Online]
Available at: https://www.fastcompany.com/91038094/4-ways-business-schools-can-prepare-students-to-work-in-an-ai-fueled-future
[Accessed 1 November 2024].

Financial Times, 2024. *Generative AI set to affect 300mn jobs across major economies*. [Online]
Available at: https://www.ft.com/content/7dec4483-ad34-4007-bb3a-7ac925643999
[Accessed 30 October 2024].

Financial Times, no date. *Business schools in the age of AI*. [Online]
[Accessed 01 November 2024].

Forbes, 2024. *How AI Is Transforming The Finance Industry*. [Online]
Available at: https://www.forbes.com/sites/kathleenwalch/2024/09/14/how-ai-is-transforming-the-finance-industry/
[Accessed 31 October 2024].

Forbes, 2024. *Top 10 Industries Hiring AI Jobs In 2024*. [Online]
Available at: https://www.forbes.com/sites/rachelwells/2024/09/24/top-10-sectors-hiring-ai-jobs-in-2024-as-searches-exceed-29-million/
[Accessed 30 October 2024].

Harvard Business Review, 2019. *When AI Becomes a Part of Our Daily Lives*. [Online]
Available at: https://hbr.org/2019/05/when-ai-becomes-a-part-of-our-daily-lives
[Accessed 02 November 2024].

Harvard Business Review, 2024. *What the Finance Industry Tells Us About the Future of AI*. [Online]
Available at: https://hbr.org/2023/08/what-the-finance-industry-tells-us-about-the-future-of-ai
[Accessed 30 October 2024].

Harvard Business School Publishing, 2020. *The Analytics and AI Opportunity for Business Schools*. [Online]
Available at: https://hbsp.harvard.edu/inspiring-minds/the-analytics-and-ai-opportunity-for-business-schools
[Accessed 1 November 2024].

Harvard Graduate School of Education, 2024. *Students Are Using AI Already. Here's What They Think Adults Should Know*. [Online]
Available at: https://www.gse.harvard.edu/ideas/usable-knowledge/24/09/students-are-using-ai-already-heres-what-they-think-adults-should-know
[Accessed 2 November 2024].

IBM, 2023. *What is artificial intelligence (AI) in finance?*. [Online]
Available at: https://www.ibm.com/topics/artificial-intelligence-finance#:~:text=AI%20in%20finance%20is%20the%20use%20of%20technology%2C,automate%20tasks%20and%20improve%20decision-making%20in%20financial%20services.
[Accessed 31 October 2024].

IFAC, 2024. *AI's Impact on Accountancy Education: A Student's Perspective*. [Online]
Available at: https://www.ifac.org/knowledge-gateway/discussion/ai-s-impact-accountancy-education-student-s-perspective
[Accessed 1 November 2024].

IMF, 2024. *AI Will Transform the Global Economy. Let's Make Sure It Benefits Humanity.*. [Online]
Available at: https://www.imf.org/en/Blogs/Articles/2024/01/14/ai-will-transform-the-global-economy-lets-make-sure-it-benefits-humanity
[Accessed 30 October 2024].

Indeed, 2024. *What Are Professional Services? (Definition and Examples)*. [Online]
Available at: https://www.indeed.com/career-advice/career-development/what-are-professional-services
[Accessed 29 October 2024].

KPMG, 2021. *Future of finance: Extreme Automation*. [Online]
Available at: https://assets.kpmg.com/content/dam/kpmg/sg/pdf/2021/01/Extreme-automation.pdf
[Accessed 01 November 2024].

KPMG, 2024. *AI in financial reporting and audit*. [Online]
Available at: https://assets.kpmg.com/content/dam/kpmgsites/xx/pdf/2024/04/ai-in-financial-reporting-and-audit-web.pdf.coredownload.inline.pdf
[Accessed 01 November 2024].

Krause, D. S., 2023. *Adapting the Finance Curriculum for an AI-Driven Futur*. [Online]
Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4448143
[Accessed 1 November 2024].

McKinsey & Company, 2018. *Bots, algorithms, and the future of the finance function*. [Online]
Available at: https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/bots-algorithms-and-the-future-of-the-finance-function
[Accessed 1 November 2024].

Mckinsey & Company, 2024. *The state of AI in early 2024: Gen AI adoption spikes and starts to generate value*. [Online]
Available at: https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai
[Accessed 29 October 2024].

McKinsey & Company, 2024. *What is AI (artificial intelligence)?*. [Online]
Available at: https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-ai
[Accessed 31 October 2024].

Micorsoft Copilot, 2024. *Is the tech industry the bellwether for other industries in AI*. [Online]
Available at: https://copilot.cloud.microsoft/?fromcode=bingchat&redirectid=EDC76260EC73432BA7FF5388BF2D7ED1&auth=2
[Accessed 30 October 2024].

Microsoft, 2024. *Explore insights from the AI in Education Report*. [Online]
Available at: https://www.microsoft.com/en-us/education/blog/2024/04/explore-insights-from-the-ai-in-education-report/?msockid=098e5aff39da695339984fdb383d6874
[Accessed 02 November 2024].

Monash University, no date. *Using artificial intelligence*. [Online]
Available at: https://www.monash.edu/student-academic-success/build-digital-capabilities/create-online/using-artificial-intelligence
[Accessed 03 November 2024].

OECD iLibrary, 2023. *The impact of AI on the workplace: Main findings from the OECD AI surveys of employers and workers*. [Online]
Available at: https://www.oecd-ilibrary.org/docserver/ea0a0fe1-en.pdf?expires=1730476640&id=id&accname=guest&checksum=D9242A98E0146995373ADC6D3AE6EAF2
[Accessed 1 November 2024].

OpenAI, 2023. *GPTs are GPTs: An early look at the labor market impact potential of large language models*. [Online]
Available at: https://openai.com/index/gpts-are-gpts/
[Accessed 30 October 2024].

PWC, 2019. *Making sense of automation in financial services*. [Online]
Available at: https://www.pwc.com/us/en/industries/financial-services/library/making-sense-of-automation.html
[Accessed 31 October 2024].

Resilient Educator, 2016. *Beyond the Test: How Teaching Soft Skills Helps Students Succeed*. [Online]
Available at: https://resilienteducator.com/classroom-resources/teaching-soft-skills/
[Accessed 1 November 2024].

Stanford University, 2024. *The AI index report*. [Online]
Available at: https://aiindex.stanford.edu/report/
[Accessed 29 10 2024].

The Alan Turing Institute, 2023. *The AI Revolution: Opportunities and*. [Online]
Available at: https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&as_ylo=2023&q=ai+in+finance&btnG=
[Accessed 31 October 2024].

The New York Times, 2024. *Generative A.I.'s Biggest Impact Will Be in Banking and Tech, Report Says*. [Online]
Available at: https://www.nytimes.com/2024/02/01/business/ai-impact-jobs.html
[Accessed 30 October 2024].

The Wall Street Journal, 2024. *Changing the Game: How AI Is Poised to Transform Banking, Capital Markets*. [Online]
Available at: https://deloitte.wsj.com/cio/changing-the-game-how-ai-is-poised-to-

transform-banking-capital-markets-2e68eeba
[Accessed 31 October 2024].

World Economic Forum, 2018. *4 ways AI will impact the financial job market*. [Online]
Available at: https://www.weforum.org/agenda/2018/09/4-ways-ai-artificial-intelligence-impact-financial-job-market/
[Accessed 25 10 2024].

World Economic Forum, 2020. *These are the top 10 job skills of tomorrow – and how long it takes to learn them*. [Online]
Available at: https://www.weforum.org/stories/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/
[Accessed 1 November 2024].

World Economic Forum, 2023. *Future of jobs 2023: These are the most in-demand skills now - and beyond*. [Online]
Available at: https://www.weforum.org/stories/2023/05/future-of-jobs-2023-skills/
[Accessed 12 October 2024].

World Economic Forum, 2023. *The future of jobs in the age of AI, sustainability and deglobalization*. [Online]
[Accessed 30 October 2024].

World Economic Forum, 2024. *Emerging technologies*. [Online]
Available at: https://www.weforum.org/agenda/2024/04/stanford-university-ai-index-report/
[Accessed 28 10 2024].