

The Impact of AI Technologies on Salary and Industry Demand for Software Engineering Roles in Sri Lanka

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ABSTARACT

The rapid integration of Artificial Intelligence (AI) technologies has transformed the global software engineering industry, and this change is no exception in Sri Lanka. This research study focuses on the impact of AI on salary trends, job role demands, and evolving skill requirements within Sri Lanka's software engineering sector. This study examined survey responses and analyzed LinkedIn job postings to identify the overarching trends: the surging demand for AI-centric roles, such as machine learning engineers, data scientists, and AI specialists, while the traditional roles like software developers are being redefined and specialized. It also investigates how dependence on AI is growing and focuses on the automatic code generation platforms, intelligent debugging assistants, and AI-driven testing frameworks, providing additional resources to accelerate software development process of software, enhancing productivity, and bringing quality to code. It calls for a complete set of new skills, which are machine learning, natural language processing, and AI-based software testing, in addition to bringing more efficiency into the workflow. Upskilling and educational reforms are crucial to addressing skill gaps created by AI in the software engineering landscape. It aims to provide actionable insights to industry stakeholders, educators, and policymakers on adapting to the AI-driven transformations necessary to maintain competitiveness of Sri Lanka in the software engineering workforce.

A. Introduction

The integration of Artificial Intelligence (AI) technologies has significantly impacted software engineering job roles globally, including in Sri Lanka. AI-driven automation, intelligent debugging, AI-assisted software testing have shifted the demand for traditional software engineering roles toward AI-centric expertise. This research investigates AI's impact on salaries, job demand, usage of AI tools, and skill requirements within Sri Lanka's software engineering sector.

B. Literature Review

The adoption of AI has reshaped software engineering, requiring professionals to acquire skills in machine learning and AI-driven development methodologies [1]. Studies indicate an increasing demand for AI specialists, while traditional coding roles are evolving to incorporate AI tools such as GitHub Copilot and OpenAI Codex [2]. Additionally, AI-driven automation is reducing manual software testing roles while increasing the need for AI-based testing expertise [3].

A study by Grag [4] highlights how AI streamlines software development, minimizing repetitive tasks and enhancing productivity. Similarly, Özpölat et al. [3] emphasize the growing reliance on AI for requirement analysis, coding assistance, and test automation. Necula [5] discusses AI's long-term effects on the job market, suggesting that AI-intensive roles will continue to rise while conventional roles diminish. Amarasooriya [6] provides evidence of Sri Lanka's IT job market trends in 2019.

C. Materials and Methods

A mixed-method approach was used, incorporating LinkedIn job market analysis and surveys of Sri Lankan software engineers. Data was collected from over 350 jobs posting and 100 survey responses, analyzing salary trends, skill requirements, job demands, and AI tools used in software development. Data was analyzed using Python's libraries.

D. Results and Discussion

• Job Demand Trend in Software Engineering

Job demand trends in the software engineering industry show significant shifts when comparing the data from 2019 to 2024. Table 1 illustrates the change in the percentage of job titles, showing the rise of specialized sectors such as Data Science, AI/ML Engineering, and UI/UX Engineering.

The LinkedIn data analysis determined that Software Developer jobs were 26.6% of all postings, the highest in demand. AI/ML Engineers represented 5.06% of postings, a niche but rapidly growing segment.

Table 1: Job Demand Trend-2024

Job Category	Percentage of SE job Demand (%) - 2024
Software Developer	26.67
Data Science	12.00
Quality Assurance Engineer	11.73
DevOps Engineer	9.33
Business Analyst	6.40
Technical Support	5.33
AI/ML Engineer	5.07
Project Manager	4.80
UI/UX Engineer	4.27
Cloud Engineer	4.27
Business Development	4.00
Database Admin	2.40
Cyber Security Engineer	2.13
Network Engineer	1.60

To analyze the overlapping job demand trends between 2019 and 2024, this study computed the intersection of job categories that appeared in both years and recalculated their new distributions based on the total demand. Figure 1 provides a normalized comparison of job trends.

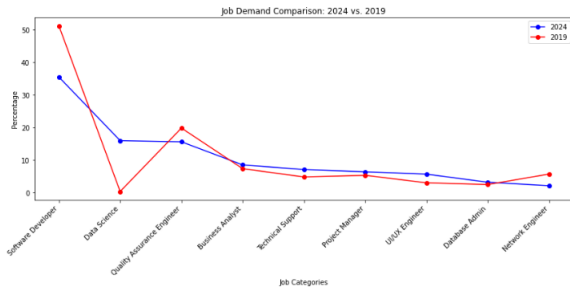


Figure 1: Job Demand Comparison (2024 vs. 2019) [6]

The findings indicate that the career landscape of software engineering has become more varied over the past five years, with newer fields like AI/ML and Data Science catching up.

• Salary Trends Due to AI

Figure 2 shows AI's mixed impact on salary growth. While many saw no significant change, some experienced notable increases, while others faced minimal growth. This highlights AI's uneven effect across different roles and industries.

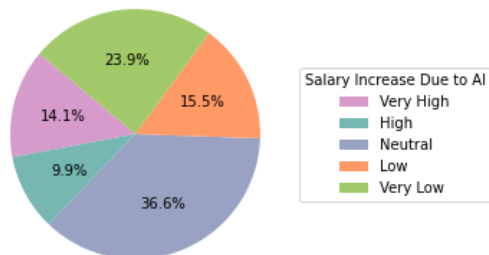


Figure 2: Impact of AI on Salary Increase

• Adoption of AI Tools within the Software Engineering Industry

AI tool adoption in software engineering has been increasing at a rapid rate, with the majority of practitioners leveraging AI in their practices. AI tools such as GitHub Copilot for code generation and Selenium for automated testing are becoming integrated into the development workflow [7].

Based on survey results, common AI tools in the industry today may include:

Table 2: AI Tools Used in the Software Engineering Field

Category	AI Tool
General AI Assistants and Chatbots	ChatGPT, Claude.AI, Perplexity, CloudGPT
Code Assistants and AI-Powered Development Tools	OpenAI Codex, TabNine, GitHub Copilot, Cursor AI, Deepseek, Blackbox.ai
AI for Software Testing and DevOps	Testim, Applitools, Selenium AI, Jira with AI Insights
AI for Cloud and Machine Learning	TensorFlow, AWS AI Service (e.g. SageMaker)
AI for Design and Creativity	Figma with AI Plugins, DiagramGPT
Advanced AI Models and Open-Source Alternatives	Gemini, Groq, Cortex, Mistral AI

The results show that AI is now a default tool for most software engineers, specifically for coding, testing, and debugging-related tasks.

E. Conclusion

The study highlights the transformative effect of AI on Sri Lanka's software industry, emphasizing the need for upskilling and curriculum reform to align with industry trends. Future research should focus on long-term career growth prospects for AI-integrated roles.

REFERENCES

- [1] P. Jain, "Interaction between Software Engineering and Artificial Intelligence- A Review," in *International Journal of Computer Applications*, vol. 3, no. 12, pp. 21-28, 2011.
- [2] Z. Özpölat, Ö. Yildirim, and M. Karabatak, "Artificial Intelligence-Based Tools in Software Development Processes: Application of ChatGPT," in *European Journal of Technic*, vol. 13, no. 3, pp. 14-26, 2023.
- [3] F. A. Batarseh, A. Kumar, R. Mohod, and J. Bui, "The Application of Artificial Intelligence in Software Engineering – A Review Challenging Conventional Wisdom," in *IEEE Access*, vol. 8, pp. 110234-110250, 2020.
- [4] K. Garg, "Impact of Artificial Intelligence on Software Development: Challenges and Opportunities," in *International Journal of Software & Hardware Research in Engineering*, vol. 11, no. 8, pp. 15-22, 2023.
- [5] S.-C. Necula, "AI Impact on the Labour Force: Searching for the Analytical Skills of Future Software Engineers," in *arXiv preprint arXiv:2302.13229*, 2023.
- [6] P. M. D. S. Amarasekiriya, "Analysis of Future Demand for Sri Lankan ICT Undergraduates in ICT Industry: Mapping the ACM/IEEE Computing Degrees with Emerging Technologies," in *SSRN Electronic Journal*, 2024.
- [7] H. Sofian, N. A. M. Yunus, and R. Ahmad, "Systematic Mapping: Artificial Intelligence Techniques in Software Engineering," in *IEEE Access*, vol. 10, pp. 51021–51040, 2022.