

# The Disappearing First Step: Entry-Level Development in the Age of AI

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**ABSTRACT-** As Artificial Intelligence (AI) does most of the work which entry level professionals were expected to do, the entry level professionals don't feel the need to learn all the basics. This model creates a situation where basic fundamentals of the job are not clear enough to build complex and intricate concepts. Also, AI promotes a false sense of knowing due to which junior professionals are confident but are flabbergasted when asked to solve real problems. Additionally, the first principle thinking, which requires a person to break the problem to its most fundamental pieces is also missing in the way juniors tackle problems. This shift in entry level jobs will also affect the quality of knowledge senior professionals hold a few years from now. This paper examines how AI affects junior level professionals and their learning.

**Index Terms-** Artificial Intelligence, Professional Development, Junior Talent, Automation, Skill Erosion, Workforce Pipeline.

## I. INTRODUCTION

The advent of Large Language Models (LLMs) has made the idea of learning the basics redundant as the LLMs are now capable of doing what most entry level professionals are expected to do. As easy or beginner level tasks helped juniors learn the fundamentals and using that fundamentals, they were able to understand and intricate complex concepts, this also helped juniors to form a thought process necessary for the job.

## II. THE SKILL-BUILDING DISPLACEMENT

When a novice enters any field, he is given fundamental tasks for an initial time period. Repetition of these fundamental tasks and seemingly mundane work helps juniors build a muscle memory and thought process necessary for the advanced tasks which they are expected to

handle after a few years of experience. Tasks such as data cleaning, drafting basic briefs, or writing boiler plate code may seem irrelevant at first but this "grunt work" is necessary to reach mastery.

With AI performing entry level tasks with greater speed and more deftly, the Juniors never get a chance to learn the basics as they get the work done in just a few prompts. While bypassing these basic tasks and foundational steps may seem harmless in the beginning but it risks "skill erosion". Without the clear understanding of basics, they professionals fail to develop the underlying logic required to troubleshoot the complex and intricate issues.

## III. THE EXPERTISE PARADOX

A major disadvantage for the new workforce is the task to review the AI generated or completed tasks; in this way they are acting as human-in-the-loop. For this task the prerequisite is holding the expertise in the field, one has to be skilled enough to review and find errors in AI generated content.

Juniors are not experienced and skilled enough to doubt AI generated work and they often give AI generated work a green flag, even if it is not optimal. This leads to bad or subpar quality work to be pushed to customers or to a level where stakes are high and systems are vulnerable, this can lead to some catastrophic consequences. Below is the graph of the number of questions asked on stack overflow (a Question & Answers platform related to programming), it can be seen that the number of questions have dropped to the level that was in 2008 which was the year in which stack overflow was released, this directly points to the fact that people are asking less questions because they are getting most of the answers from AI and even most of the work is completed by AI with fewer number of professionals doubting it.

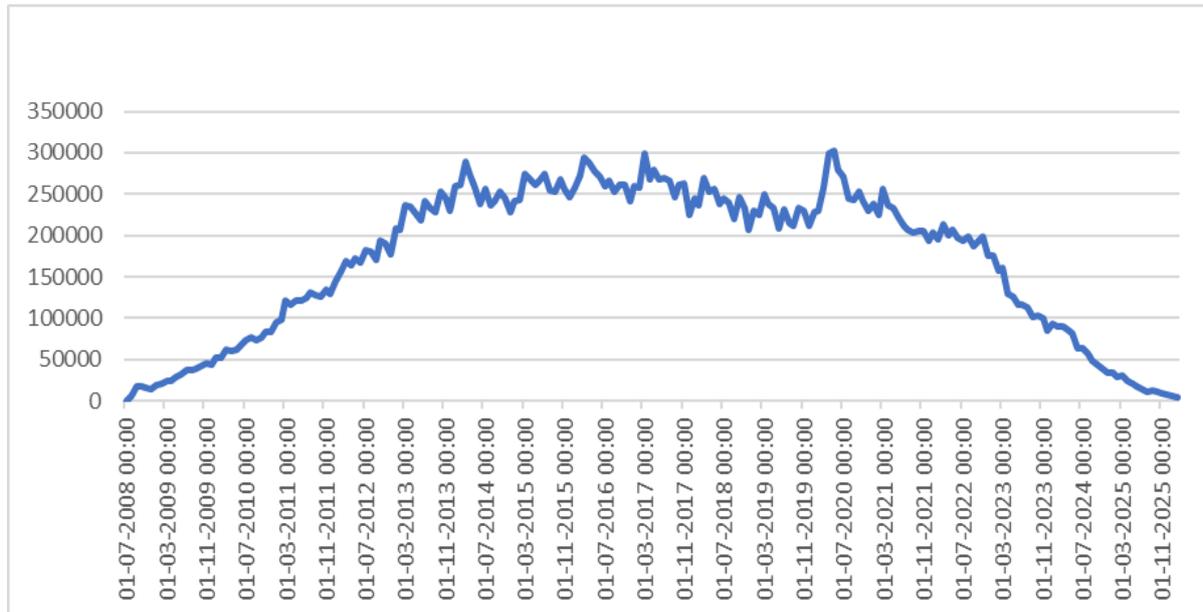


Chart-1: No. of questions posted on stack-overflow (a Q&A platform for programming) in a month since 2008.

#### IV. THE LOSS OF AMBIENT LEARNING

Professional growth is not just being good at work or technical aspects of work, rather growth is a 360-degree development where juniors also learn soft-skills and learn to navigate other aspects of work life.

Prior to the AI era juniors asked questions to seniors and also observed seniors negotiate, solve crises, and navigate unexpected situations. These skills are equally important and are the cornerstone of entry-level growth. As AI does most of the work and reduces the need for “quick questions” directed to seniors. A 2025 study found that over 30% of workers interact with colleagues less frequently since the advent of AI. This prevents the transfer of soft skills and 360-degree development of juniors which cannot be learned via LLM.

#### V. STRUCTURAL HOLLOWING OF THE CAREER LADDER

As the AI is improving and has become capable of doing most of the tasks which an entry level professional is expected to do. Organizations are incentivized to hire fewer entry-level workers, this creates a bottleneck at the start of the career ladder.

Since a lower number of entry level employees are being hired, we will have a lower number of representatives for senior positions as entry level employees are eventually promoted to high levels of the career ladder. This also creates a skill gap and critical thinking seniors are expected to have as most of the foundational tasks were done

by AI. As there are fewer individuals gaining the years of experience required to lead, the pipeline for future senior leadership is severed.

#### VI. MITIGATION AND STRATEGIES

To address these disadvantages, organizations must move beyond a "substitution" mindset and implement:

- **Limiting use of AI for juniors:** Deliberately limiting the access of AI for juniors so that they get to work on the basics and build that intuition which is required to become an expert.
- **Lowering expectations from juniors:** Most of the AI usage by juniors is driven by unrealistic expectations set by management and seniors. They are expected to deliver projects and complete tasks faster due to which they feel usage of AI necessary. If they get enough time to explore and find solutions on their own, they will be able to learn a lot in this process.
- **Structured Mentorship:** Replacing lost ambient learning with intentional "strategic shadowing" programs.

#### VII. CONCLUSION

AI is a powerful tool which can be used to complete tasks faster and sometimes in an optimized manner. But the total reliance on it can be detrimental to the entry level professionals in the long term as they might miss the fundamentals of the domain or field required to excel. Additionally, the tasks which are complex and

intricate for AI to handle and required critical thinking by the professional handling those tasks also might feel impossible because the critical thinking was never developed during the early phase of the career.

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