Rethinking Computer Science Education in the Age of GenAI: The Case of Problem-Based Learning

Samar Swaid
Broward College, United States

Abstract:

This paper explores the growing application of Problem-Based Learning (PBL) in Computer Science (CS) education at the higher education level. Grounded in constructivist theory, PBL has demonstrated significant benefits in fostering critical thinking, real-world problem-solving, and student engagement. The literature review presents key studies and models that highlight the impact and best practices of PBL in CS. The paper further proposes a new vision for integrating PBL into Artificial Intelligence (AI) courses, identifying pedagogical opportunities and practical challenges. Future steps include the design of interdisciplinary, ethically grounded, and industry-aligned PBL modules tailored for AI education.