ASHISH AGGARWAL

Instructional Associate Professor
Director, Computational Reasoning Group

Bio

Ashish Aggarwal is an Instructional Associate Professor of Computer Science in the Department of Engineering Education at the Herbert Wertheim College of Engineering, University of Florida. His research explores the intersection of Computer Science Education, Learning Analytics, and Artificial Intelligence, with a focus on developing innovative technologies and pedagogical approaches to enhance programming education. He directs the Computational Reasoning Group, where he mentors students on Computing Education Research and Learning Analytics projects. His current work includes developing AI-powered educational technologies, including applications of large language models (LLMs), for student assistance, assessment, and fostering learner agency.

Prof. Aggarwal currently teaches COP3502C: Programming Fundamentals-1, a Python programming course. In his teaching, he incorporates flipped classroom methodologies integrated with educational technologies to create a more effective learning environment. He focuses on understanding how students engage with formative learning tools and works on developing mastery-learning-based systems that respond to individual students' learning needs.

He holds a Master's in Computer Science from the University of Florida (2017) and a Bachelor's in Computer Science and Engineering from Jaypee University of Information Technology, India (2015).

Primary Research Area

CS Education Research

Research Areas

CS Education Research, Learning Analytics, Artificial Intelligence, Educational Technologies, Human-Centered Computing

Courses

- COP3502C Programming Fundamentals-1 - Python (On Campus & UF Online)
- COP2271 Computer Programming for Engineering - MATLAB (Course Lead)

Education

- M.S., Computer Science and Management, University of Florida, 2017
- B.Tech., Computer Science and Engineering, Jaypee University of Information Technology, India, 2015

Research Interests

Computer Science Education, Educational Technologies, Learning Analytics, Artificial Intelligence in Education, Mastery and Formative Learning, Behavioral Engagement Patterns, Flipped Classroom Methodologies, Educational Technology Design, AI Ethics Frameworks

Publications

See full list on Google Scholar.

Recent publications include work on behavioral engagement patterns in CS1 classes, AI ethics frameworks for decision-making, mastery learning in CS, and comparative studies of natural and programming language acquisition.

Major Research Projects

- **Leveraging LLMs into Programming Courses**: Co-PI on $474,000 UF Presidents' Strategic Initiative Grant, developing AI-powered tools for student assistance and assessment
- **YANTRA Edu**: Mastery learning based application system for undergraduate programming courses
- **EdStream**: Integrated messaging and collaboration tool for Canvas LMS
- **KAIZEN:** An intelligent tutoring system powered by large language models that delivers immediate, adaptive instructional support and assessment within the Canvas LMS
- **CIPHER**: A personalized learning assistant for courses in Canvas LMS
- **ANUMAAN**: AI-Ethics Framework for Default Reasoning and Decision Making

Awards & Distinctions

- **Teacher of the Year Award**, Department of Engineering Education, Herbert Wertheim College of Engineering, University of Florida, 2023
- **Affordability Access Award**, Center for Teaching Excellence, University of Florida, 2023
- **Teacher of the Year Award**, Department of Engineering Education, Herbert Wertheim College of Engineering, University of Florida, 2022

- **Alec Courtelis Award**, Best International Graduate Student, University of Florida International Center, 2017
- **Presidential Service Award**, University of Florida, 2016, 2017
- **Pound Outstanding Student Scholarship**, Hough Graduate School of Business, University of Florida
- **Outstanding Student Award**, Hough Graduate School of Business, University of Florida

Leadership & Service

- **Associate Editor**, ACM Transactions on Computing Education (TOCE)
- **Program Committee**: Senior Co-Chair, Posters Track, ACM SIGCSE-25; Junior Co-Chair, ACM SIGCSE-24; Co-Chair, ACM Student Research Competition at SIGCSE TS (2022 & 23)
- **Reviewer**: ACM SIGCSE, ACM ITiCSE, ACM ICER, ACM TOCE, ACM CHI, EAAI, IEEE RESPECT

News

- What is a full-stack-developer? Fortune-August 2024
- UF engineering researchers lead collaboration to improve student experience through AI

Contact Information

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