AJAY BANSAL
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Google Scholar link DBLP link

BIOGRAPHY

Ajay Bansal is a Teaching Professor and Associate Program Chair of the Software Engineering Program in the School of Computing and Augmented Intelligence at ASU. He champions a discovery-based teaching approach that immerses students in solving complex, open-ended problems, cultivating algorithmic thinking and fostering deep understanding through hands-on inquiry. Recognized with the Fulton Teaching Excellence Award (2019, 2022) and Best Teacher Award (Top 5% in six separate years), he has taught over 8,200 students and offered more than 95 classes across the computing curriculum at ASU. His mentorship spans over 100 students, including PhD, masters, undergraduate, and high school researchers. Passionate about outreach, he advises student orgs/clubs, has led multiple summer camps for K-12 students and faculty development programs in India. His research focus includes Computing Education, particularly individualized and game-based learning, with 80+ peer-reviewed publications.

EDUCATION

Ph.D. The University of Texas at Dallas, Computer Science, Dec 2007
M.S. Texas Tech University, Computer Science, May 2002
B.Tech. National Institute of Technology – Warangal (India), Computer Science and Engineering, May 1999

PROFESSIONAL APPOINTMENTS

2011 – present: Teaching Professor (Lecturer 2011-2013, Senior Lecturer 2013-2016, Assistant Professor 2017-2024), SCAI, ASU
2008 – 2011: Visiting Assistant Professor (Postdoc Jan 2008-Aug 2008) Dept of Computer Science, Georgetown University
2001-2003: Software Engineer, Tyler Technologies Inc, Plano, TX
1999: Software Engineer, SIEMENS Public Communication Networks Ltd., Bangalore, India

HONORS AND AWARDS

Nominated for Outstanding Faculty Mentor Award, ASU Graduate College	2023
Fulton Teaching Excellence Award, ASU Fulton Schools of Engineering	2022, 2019
Best Teacher Award –Top 5% ASU Fulton Schools of Engineering	2024, 2021, 2020, 2018, 2015, 2013
10-year Test of Time Award, International Conference on Logic Programming (ICLP 2016)	2016

COURSES DEVELOPED & TAUGHT (both grad and undergrad in immersion, hybrid, and/or online formats for ASU-Poly & ASU Online)

Advanced Data Structures and Algorithms (Graduate)	Object-oriented Software Development I
Emerging Languages & Programming paradigms (Graduate)	Software Fundamentals – I & Software Fundamentals – II
Introduction to Programming Languages	Software Enterprise I – Tools & Processes
Programming Languages and their Execution Environment	Software Enterprise II - Construction & Transition
Principles of Database Management	Applications of Computer Theory
Web Client User Interface Programming (upper-level)	Applications of Artificial Intelligence (upper-level)

STUDENT MENTORING

Doctoral students Graduated (Chair): 3	Doctoral students Current (Chair): 2	Doctoral Students (Committee): 4
MS students (Thesis-Chair): 30	MS students (MORE research, projects): 15	MS students (Committee): 15
UG students (Honors thesis, FURI & CREU scholars): 25	Capstone projects: 6 teams	K-12 senior projects: 5

PUBLICATIONS SUMMARY

Journal Papers: 11	Conference Proceedings (Peer-reviewed): 65	Invited Panelist: 1
Book Chapters: 5	Invited Talks: 11	Guest Editorials & Technical reports: 7

SELECT PEER-REVIEWED PUBLICATIONS RELATED TO ADVANCING CURRICULUM DEVELOPMENT, LEARNING AND EDUCATION (* Phd Student; ˜ MS Student)

[Conference] Acuña, R.*, **Bansal, A**. "WIP: Characterizing Student Programming Activity", *Proceedings of 2024 IEEE Frontiers in Education Conference (FIE), 1-5, 2024.*

[Conference] Acuña, R.*, **Bansal, A**. "Improving Student Learning with Automated Assessment", *Proceedings of the 2024 on Innovation and Technology in Computer Science Education, pp 464-470, 2024.*

[Conference] Acuña, R.*, & **Bansal, A**. "Assessing Student Programming Process Using Automated Reasoning". *Proceedings of the 2023 IEEE Frontiers in Education Conference (FIE)*.

[**Book Chapter**] Verma, V*., Amresh, A., Baron, T., & **Bansal, A**. (2023). *Software Engineering for Dynamic Game Adaptation in Educational Games* (pp 43–62). Springer.

[Conference] Acuna, R.*, **Bansal, A**. "Using Programming Autograder Formative Data to Understand Student Growth", *Proceedings of the 2022 IEEE Frontiers in Education Conference (FIE)*; 2022; pp 1–8.

[Conference] Dileep, A. K.˜, **Bansal, A**., Cunningham, J. "Early Detection of At-Risk Students in a Calculus Course", *Proceedings of the 2022 IEEE 46th Annual Computers, Software, and Applications Conference, COMPSAC 2022*; IEEE: Virtual, 2022; pp 187–194.

[Conference] Verma, V.*, Craig, S. D., Amresh, A., **Bansal, A**. "Content Agnostic Game Engineering: Impact of Stealth Assessment and Content Order on Player Engagement", *Proceedings of 2021 Future Technologies Conference*; Springer 2021; Vol 3, pp 455–470.
[Conference] Acuna, R.*, & **Bansal, A**. "SimInt: A Structured Experience to Develop Mature Engineering Mindset". *Proceedings of the 2021 IEEE Frontiers in Education (FIE)*, pp 1–5.
[Journal] Verma, V.*, Craig, S., Levy, R., **Bansal, A**., Amresh, A. "Domain Knowledge and Adaptive Serious Games: Exploring the Relationship of Learner Ability and Affect Adaptability", *Journal of Educational Computing Research,* 60, pp 406–432, 2022.
[Conference] Verma, V.*, Amresh, A., Craig, S. D., & **Bansal, A**. "Validity of a Content Agnostic Game Based Stealth Assessment". *Proceedings of the 2021 International Conference on Games and Learning Alliance (GALA)*, pp 121–130.
[Conference] Acuna, R.*, & **Bansal, A**. "Analysis-Design-Justification (ADJ): A Framework to Develop Problem-Solving Skills". *Proceedings of the 2021 IEEE Global Engineering Education Conference (EDUCON)*, 366–372.
[Conference] Acuna, R.*, & **Bansal, A**. "Leveraging the ADJ framework to improve real-world problem-solving skills in computing courses". *Proceedings of 26th ACM Conference on Innovation and Technology in Computer Science Education V. 1*, 2021, pp 39-45.
[Conference] Monroe, Z.˜, & **Bansal, A**. "Kitsune: Structurally Aware and Adaptable Plagiarism Detection". *Proceedings of the 2021 IEEE Frontiers in Education Conference (FIE)*, 2021, pp 1–9.
[Conference] Verma, V.*, Rheem, H., Amresh, A., Craig, S. D., & **Bansal, A**. "Predicting Real-Time Affective States by Modeling Facial Emotions Captured During Educational Video Game Play". *Intl. Conference on Games and Learning Alliance (GALA)*, 2020, pp 447–452.
[Book Chapter] Verma, V.*, Baron, T., **Bansal, A**., Amresh, A. "Emerging Practices in Game-Based Assessment", in "*Game-Based Assessment Revisited*", *Springer* 2019, Chapter 16, pp 327-346, ISBN 978-3-030-15568-1.
[Conference] Pandit, D.˜, **Bansal, A**. "A declarative approach for an adaptive framework for learning in online courses" Proceedings of *IEEE Computer Society Conference on Computers, Software and Applications (COMPSAC),* Milwaukee, USA, July 2019, pp. 212-215.
[Journal] Bansal, S, **Bansal, A**. "Experiences translating project-based Software Engineering courses into online courses", *Journal of Engineering Education Transformations* (JEET), January 2016.
[Journal] Bansal, S., **Bansal, A**., Dalrymple, O. "Outcome-based Education Model for Computer Science Education", *Journal of Engineering Education Transformations* (JEET) Volume 28, Issue 2&3, January 2015, pp. 113-121.

SELECT INVITED TALKS

- Faculty development program: "Symbolic Computing & Knowledge Representation", Elec. & ICT Academy NITW India, Mar 2022.
- Invited talk: "Successful approaches to Computer Science teaching", East Carolina University, Nov 2019.
- Faculty Development Program: "Knowledge Representation & Reasoning", week-long workshop at Vignan Univ., India, Jul 2019.
- Invited talk: "Experiences translating project-based Software Engineering courses into online courses", International Conference on Transformations in Engineering Education (ICTIEE), Jan 11, 2016, Pune, India.

SERVICE

[To University]

- [Fall 2024 – current] Faculty advisor: International Sun Devils (ISD)
- [Fall 2024 – current] Faculty advisor: Yoga and Meditation Association
- [Fall 2024 – current] Faculty advisor: Jain Students' Association (JSA)
- [Fall 2024 – current] Faculty advisor: India Policy & Economy Research Club at ASU (PIERA)
- [Fall 2017 - current] Mentor: Master's Opportunity for Research in Engineering (MORE)
- [Fall 2017 - current] Mentor: Fulton Undergraduate Research Initiative (FURI)
- [Fall 2012 – Spring 2022] Faculty advisor: Dev Club @ ASU Poly

[To School & College]

- [Fall 2024 – present] Associate Program Chair, Software Engineering
- [Fall 2018 – Spring 2023] SCAI Administration and Planning Committee member
- [Fall 2024 – present] Dean's Faculty Advisory Committee (DFAC) member
- [Fall 2024 – present] Undergraduate Assessment Committee (UAC) member
- [Fall 2019 – Spring 2024] Graduate Program Committee (GPC) Chair, Software Engineering
- [Spring 2017 – present] Graduate Program Committee (GPC), Software Engineering
- [Summer 2017- current] Internship Coordinator, Software Engineering
- [Fall 2017 – current] Course coordinator for SER 322, 501, 502.
- [Fall 2013 – Spring 2016] Undergraduate Program Committee (UPC), Software Engineering

[To Community & Profession]

- [2022-current] Associate Editor, World Scientific International Journal of Semantic Computing (IJSC) ISSN (print): 1793-351X
- [2022-current] Subject Matter Expert, IEEE Academy on AI
- [2020-2023, 2018-2017] Co-Organizer Third International Workshop on Semantic Data Integration (SDI)
- [2019-2024] PC Member International Conference on Semantic Computing (ICSC)
- [2020-2024] Lead Program Chair IEEE Artificial Intelligence x Data Knowledge Engineering (AIxDKE)
- [2019-2020] PC Member International Joint Conference on Artificial Intelligence (IJCAI)
- [2018-2019] PC Member International Conference on Machine Leaning Applications (ICMLA)
- [2008-09] Co-Organizer Web Services Challenge (WSC)