Swaroop Joshi

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Employment

Birla Institute of Technology and Science (BITS) Pilani, KK Birla Goa Campus · Goa India
Assistant Professor, Computer Science and Information Systems 2021–present

University of Utah · Salt Lake City UT USA
Assistant Professor – Lecturer, School of Computing 2019–2020

The Ohio State University · Columbus OH USA
Senior Lecturer, Computer Science and Engineering 2017–2019

Indian Institute of Technology Bombay · Mumbai India
Senior Project Engineer, GCC Resource Center 2010–2011

SoftJin Technologies Pvt Ltd · Bengaluru India
Software Engineer 2005–2006

Education

The Ohio State University, Ph.D. in Computer Science & Engineering 2017

The Ohio State University, M.S. in Computer Science & Engineering 2016

Indian Institute of Technology Bombay, M.Tech. in Computer Science & Engineering 2010

National Institute of Technology Karnataka, Surathkal, B.E. in Computer Engineering 2005

Publications

Chapters in Edited Volumes

O. Ahlqvist, **S. Joshi**, R. Benkar, K. Vatev, R. Ramnath, A. Heckler, and N. Soundarajan. *Defining a Geogame Genre Using Core Concepts of Games, Play, and Geographic Information and Thinking*. In: Geogames and Geoplay: Game-based Approaches to the Analysis of Geo-Information. Ed. by O. Ahlqvist and C. Schlieder. Springer International Publishing, 2018, pp. 19–35.

Peer Reviewed Conferences

S. Joshi. *Teaching Accessibility in India: A Work in Progress*. In: Proceedings of the 17th ACM Conference on International Computing Education Research (ICER 2021), Aug. 2021, Virtual Event, USA.

P. Bhattacharya, **S. Joshi**, S. Bandyopadhyay and R. Mittal. *Virtual CS Education in India: Challenges and Opportunities*. In: International Conference on Best Innovative Teaching Strategies (ICON-BITS'21), Jul. 2021, BITS Pilani, India.

S. Joshi, N. Soundarajan, and J. Morris. *Innovative Approach to Online Argumentation in Computing and Engineering Courses*. In: 125th ASEE Annual Conference and Exposition. American Society for Engineering Education, 2018.

N. Soundarajan and **S. Joshi**. *Innovative Approach to Online Argumentation and Models for Structuring the Arguments*. In: 2018 IEEE Frontiers in Education Conference (FIE) (FIE 2018). San Jose, USA, Oct. 2018.

S. Joshi and N. Soundarajan. *Using Anonymity and Rounds-Based Structure for Effective Online Discussions in STEM Courses*. In: 124th ASEE Annual Conference & Exposition Proceedings. American Society for Engineering Education, 2017.

S. Joshi and N. Soundarajan. *CONSIDER: A Novel Approach to Conflict-Driven Collaborative Learning in Engineering Courses*. In: 2016 ASEE Annual Conference & Exposition Proceedings. American Society for Engineering Education, June 2016.

S. Joshi and N. Soundarajan. *Enabling Deep Conceptual Learning in Computing Courses through Conflict-based Collaborative Learning*. In: 2016 IEEE Frontiers in Education Conference (FIE) (FIE 2016). Erie, USA, Oct. 2016.

S. Joshi and N. Soundarajan. *Exploring conflict-based collaborative learning in engineering courses*. In: ASEE North Central Sectional Conference Proceedings. American Society for Engineering Education, Mar. 2016.

S. Joshi, N. Soundarajan, and R. Ramnath. *Conflict-Driven Cooperative-Learning in Computing Courses (Abstract Only)*. In: Proceedings of the 46th ACM Technical Symposium on Computer Science Education - SIGCSE '15. Association for Computing Machinery (ACM), Mar. 2015.

N. Soundarajan, **S. Joshi**, and R. Ramnath. *Collaborative and Cooperative-Learning in Software Engineering Courses*. In: 2015 IEEE/ACM 37th IEEE International Conference on Software Engineering. Institute of Electrical & Electronics Engineers (IEEE), May 2015.

N. Soundarajan, **S. Joshi**, and R. Ramnath. *Work-in-Progress: Conflict-Driven Cooperative Learning in Engineering Courses*. In: 2015 ASEE Annual Conference and Exposition Proceedings. American Society for Engineering Education, June 2015.

N. Soundarajan, **S. Joshi**, and R. Ramnath. *Work-in-progress: A novel approach to collaborative learning in the flipped classroom*. In: 121st ASEE Annual Conference and Exposition. American Society for Engineering Education, June 2014.

Dissertations

S. R. Joshi. *CONSIDER: A Novel, Online Approach to Conflict-Driven Collaborative-Learning*. PhD thesis. The Ohio State University, Aug. 2017.

S. Joshi. *Extending the Generic Data-Flow Analyzer (gdfa) in GCC*. Master's Project Report. Indian Institute of Technology Bombay, June 2010.

Other

S. Bandyopadhyay and **S. Joshi**. *A Report on the Second International Workshop on Software Engineering for Artificial Intelligence (SE4AI 2021)*. In: 14th Innovations in Software Engineering Conference (ISEC 2021). Association for Computing Machinery (ACM), 2021.

Awards and Honors

A git and docker based toolchain for introductory programming courses, INR 145,000, 2021–22

Co-PI: Pritam Bhattacharya
BITS Pilani, KK Birla Goa Campus, Teaching Learning Center

Sugamyata: Accessibility in Computing Education, INR 200,000, 2021–23

Research Initiation Grant (RIG), BITS Pilani (No. BPGC/RIG/2020-21/04-2021/02)

Lecturer Teaching Development Grant, Spring 2017

University Center for Advancement in Teaching, The Ohio State University

Best Student Paper Award, 2016

American Society for Engineering Education, North Central Section

Invited Talks

CPS in Computing Education: Current Trends, Oct. 2020

Current Trends in Cyber-Physical Systems (CTiCPS) 2020

Effectively Teaching a Principles of Programming Languages Course, Feb–Apr, 2019

Indo-Universal Collaboration for Engineering Education, a 10-week web course for 50 CS faculty from various engineering colleges in India

Cooperative and Collaborative Learning in Engineering Classrooms, Jul. 2018

Indo-Universal Collaboration for Engineering Education Webinar, attended by over 100 engineering faculty across India

Teaching Experience

Computer Science & Information Systems, BITS Pilani, Goa

Software Development for Portable Devices
Object Oriented Programming
Compiler Construction
Practice School I

School of Computing, University of Utah

Mobile App Development
Senior Capstone
Data Structures & Algorithms

Computer Science & Engineering, The Ohio State University

Principles of Programming Languages
Software II: Software Development and Design
Software I: Components
Introduction to Computer Programming In Java
Data Structures Using Java

Mobile App Development
C++ Programming
Introduction to Computer Programming in C++ for Engineers and Scientists

Service to Profession

Associate Editor

Journal of Engineering Education Transformations, 2018–present

Journal Reviewer

Journal of Engineering Education Transformations
The ASEE Computers in Education (CoED) Journal
SAIEE Africa Research Journal

Conference paper or poster Reviewer

ACM SIGCSE Technical Symposium on Computer Science Education, 2021, 2019, 2018
Research in Engineering Education Symposium (REES), 2021
ASEE Annual Conference & Exposition, 2021, 2019, 2018, 2017, 2016
IEEE Frontiers in Education (FIE), 2018, 2017, 2016
IEEE Teaching, Assessment and Learning for Engineering (TALE), 2018
Midwest Instruction and Computing Symposium (MICS), 2020.

Conference or workshop organizer

Co-organizer, Software Engineering for Artificial Intelligence (workshop), ACM 14th Innovations in Software Engineering Conference, online, Feb. 2021

Leadership

Secretary-Treasurer, ASEE Computers in Education Division, 2018–2020

Ph.D. Thesis Examiner

Karunakara Rai B., *Reasoning Methodology for Estimating the Degradation in the Performance of a Real-Time Fault Tolerant System*. PhD thesis. Visvesvaraya Technological University (VTU), Karnataka India, 2019

Service to University

BITS Pilani

Ph.D. admissions interview panel: Feb. 2021, Aug. 2021

University of Utah

Lecturing faculty search committee, School of Computing, 2019–2020

Teaching Areas

Programming Languages
Mobile App Development
Compiler Construction and Optimization
CS1/CS2

Professional Memberships

- Institute of Electrical and Electronics Engineers (IEEE)
  - Education Society
  - Computer Society
- Association for Computing Machinery (ACM)
  - Special Interest Group on Computer Science Education (SIGCSE)
  - Special Interest Group on Accessible Computing (SIGACCESS)