

# Swaroop Joshi

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## Employment

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE (BITS) PILANI, KK BIRLA GOA CAMPUS

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS

Assistant Professor 2021–present

UNIVERSITY OF UTAH, SCHOOL OF COMPUTING

Assistant Professor, Lecturer 2019–2020

THE OHIO STATE UNIVERSITY, COMPUTER SCIENCE AND ENGINEERING

Senior Lecturer 2017–2019

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY, GCC RESOURCE CENTER

Senior Project Engineer 2010–2011

SOFTJIN TECHNOLOGIES PVT LTD (BENGALURU INDIA)

Software Engineer 2005–2006

## Education

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

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

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

*National Institute of Technology Karnataka, Surathkal*, B.E. 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**, 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 (gdffa) in GCC*. Master's Project Report. Indian Institute of Technology Bombay, June 2010.

#### Awards and Honors

*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

## **Research Experience**

*CONSIDER, Ph.D. Dissertation Research, The Ohio State University*

2013–2017

A computer-supported collaborative learning project that leverages socio-cognitive conflict and exploits the affordances of web technologies to provide structured, anonymous, online discussion to enhance learning of concepts in college level engineering courses.

*GeoGame, Graduate Research Associate, The Ohio State University*

2014–2016

A game-based learning project where college students of world regional geography interact with each other by role-playing as farmers in developing countries.

*Testing PolyOpt/Fortran Loop Optimization Framework, Graduate Research Associate, OSU*

2011–2012

*Extending the Generic Data-Flow Analyzer (gdfa) in GCC, M.Tech. Project, IIT Bombay*

2009–2011

## **Teaching Experience**

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

SECRETARY-TREASURER

ASEE Computers in Education Division, 2018–2020

JOURNAL REVIEWER

Journal of Engineering Education Transformations

The ASEE Computers in Education (CoED) Journal

#### CONFERENCE PAPER OR POSTER REVIEWER

ACM SIGCSE Technical Symposium on Computer Science Education, 2021, 2019, 2018  
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.

#### 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

##### 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)