

Prajish Prasad

<https://prajishprasad.github.io/>

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RESEARCH INTERESTS

Computer Science Education Research, Learning Environment Design, Learning Analytics

EDUCATION

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| JULY 2021 | PhD in EDUCATIONAL TECHNOLOGY, IIT Bombay , Mumbai
Thesis: "Fostering Software Design Evaluation Skills in Students using a Technology-enhanced Learning Environment"
Advisor: Prof. Sridhar IYER
GPA: 9.52/10 |
| JULY 2012 | Master of Technology in COMPUTER SCIENCE, IIT Bombay , Mumbai
Thesis: "Formalization and Model Checking of Live Sequence Charts"
Advisor: Prof. S KRISHNA
GPA: 8.16/10 |
| JULY 2009 | Bachelor of Technology in COMPUTER SCIENCE
Shri Guruji Gobind Singhji Institute of Engineering and Technology, Nanded
GPA: 8.53/10 |

WORK EXPERIENCE

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| JULY 2021 - PRESENT | Post-doc at IIT Madras
<i>IIT Madras Online Degree Program and NPTEL</i>
- Lead course faculty for the "Software Engineering" course to be offered as part of the IITM online degree program
- Conducting research on how various pedagogic practices in the IITM online degree program can be improved
- Building systems and processes for data analytics at NPTEL and the IITM online degree program |
| JAN 2014 - JULY 2015 | Assistant Professor in Information Technology
<i>Fr. Conceicao Rodrigues College of Engineering, Mumbai</i>
Subjects Taught: Information and Network Security, Automata Theory, Operating Systems, Java Programming |
| AUG 2012 - JAN 2014 | Software Developer
<i>LoudCloud Systems, Mumbai</i>
Worked in the product development team which was responsible for developing various modules of the LoudCloud Systems Learning Management System (LMS) |

KEY RESEARCH PROJECTS

- **Thesis: Fostering Software Design Evaluation Skills in Students using a Technology-enhanced Learning Environment**
 - Designed the features and activities in "VeriSIM", a learning environment to foster software design evaluation skills in computing undergraduates. The theoretical basis of the intervention is taken from learning sciences and computing education research. VeriSIM can be accessed [here](#)
 - Conducted qualitative and quantitative studies with students to investigate the effects of VeriSIM in students' evaluation skills.
 - Analyzed interaction data logs in order to infer learner behaviours while interacting with VeriSIM.
- **Gesture based Mathematics Learning [July 2015 - July 2016]**
 - Designed and evaluated a web application "Geometry via Gestures" (GvG) which enables secondary-school students to interact with 3D objects using their gestures with the help of a Leap Motion Controller.
 - The GitHub page of GvG can be found [here](#)

TEACHING

- **Course Co-Instructor:**
 - **Software Conceptual Design**, to be offered in Feb 2022, as an NPTEL course, along with Dr. Sridhar Iyer and Dr. T.G. Lakshmi
 - **Software Engineering**, to be offered in Sept 2022, as part of the online degree program at IIT Madras, along with Dr. Sridhar Iyer
- **Teaching Assistant:**

During my PhD, I was a TA for courses, aimed at helping engineering instructors and school teachers introduce effective pedagogical practices and technology tools in their classrooms. I created and evaluated assignments, moderated discussion forums, and conducted live interactions with students.

 - MOOC Course on NPTEL 2019 - Introduction To Learning Analytics
 - MOOC Course ET611Tx 2017 - Pedagogy for effective use of ICT for school teachers.
 - MOOC Course ET612Tx 2017 - Pedagogy for effective teaching-learning of CS in schools.
 - MOOC Course ET601Tx 2016 - Educational Technology for Engineering Teachers.
 - Face-to-Face course at IIT Bombay - Introduction to Educational Technology, 2017
 - Workshop on Nurturing Quality Teaching in Engineering Education, TKM College of Engineering, Kollam, Kerala, December 2017.
- **Workshop Instructor:**

During my PhD, I also conducted workshops with computer science undergraduates, where they interacted with learning environments for fostering essential software design skills.

 - Software Design Workshop at SIES Graduate School of Technology, Navi Mumbai, December 2019 (along with T. G. Lakshmi and Deepti Reddy)
 - FrCRCE ACM Student Chapter Workshop: Understanding Software Design, Fr. Conceicao Rodrigues College of Engineering, Mumbai, September 2019

PUBLICATIONS

- **Journals**
 1. **Prasad, P., & Iyer, S.** A Model-based Learning Pedagogy for Fostering Software Design Evaluation Skills in Computer Science Undergraduates. In Research and Practice in Technology Enhanced Learning (under review)
- **Conferences**
 1. Gatare K., **Prasad P.**, Kothiyal A., Sarkar P., Raina A. and Majumdar R. (2021) Designing Nudges for Self-directed Learning in a Data-rich Environment. accepted in LA@ICCE2021
 2. Satavlekar, S., Nath, D., Priyadarshini, R., **Prasad, P.**, Singh, D. K., & Rajendran, R. (2021, July). Unraveling Learner Interaction Strategies in VeriSIM for Software Design Diagrams. In 2021 International Conference on Advanced Learning Technologies (ICALT) (pp. 308-310). IEEE.
 3. Reddy, D., Alse, K., TG, L., **Prasad, P.**, & Iyer, S. (2021, March). Learning Environments for Fostering Disciplinary Practices in CS Undergraduates. In Proceedings of the 52nd ACM Technical Symposium on Computer Science Education (pp. 1287-1287).
 4. **Prasad, P.**, & Iyer, S. (2020, August). How do Graduating Students Evaluate Software Design Diagrams?. In Proceedings of the 2020 ACM Conference on International Computing Education Research (pp. 282-290)
 5. **Prasad, P.**, & Iyer, S. (2020, June). VeriSIM: a learning environment for comprehending class and sequence diagrams using design tracing. In Proceedings of the ACM/IEEE 42nd International Conference on Software Engineering: Software Engineering Education and Training (pp. 23-33)
 6. **Prasad, P.**, & Iyer, S. (2020, November). Inferring Students' Tracing Behaviors from Interaction Logs of a Learning Environment for Software Design Comprehension. In Koli Calling'20: Proceedings of the 20th Koli Calling International Conference on Computing Education Research (pp. 1-2)
 7. Kadam K., Deep A., **Prasad P.**, Mishra S. (2019) Quantitative Evaluation of Concept Maps: An Evidence-Based Approach in the Companion Proceedings 9th International Conference on Learning Analytics & Knowledge (LAK19)
 8. **Prasad, P.** (2018, August). Developing Students' Cognitive Processes Required for Software Design Verification. In Proceedings of the 2018 ACM Conference on International Computing Education Research (pp.284-285). ACM.
 9. Lakshmi, T. G., **Prasad, P.**, & Iyer, S. (2017, July). A System for Developing Operationalization Skills through Problem Decomposition. In 2017 IEEE 17th International Conference on Advanced Learning Technologies (ICALT) (pp. 427-429). IEEE.
 10. Narayana, S., **Prasad, P.**, Lakshmi, T. G., & Murthy, S. (2016, December). Geometry via Gestures: Learning 3D geometry using gestures. In 2016 IEEE Eighth International Conference on Technology for Education (T4E) (pp. 26-33). IEEE.

11. Lakshmi, T. G., Narayana, S., **Prasad, P.**, Murthy, S., & Chandrasekharan, S. (2016). Geometry-via-Gestures: Design of a gesture based application to teach 3D Geometry. In Proceedings of the 24th international conference on computers in education (pp. 180-189). Mumbai, India: Asia Pacific Society for Computers in Education.
12. Deep, A., **Prasad, P.**, Narayana, S., Chang, M., & Murthy, S. (2016, July). Game Based Learning of Blood Clotting Concepts. In 2016 IEEE 16th International Conference on Advanced Learning Technologies (ICALT) (pp. 526-530). IEEE
13. Alse, K., Ganesh, L., **Prasad, P.**, Chang, M., & Iyer, S. (2016, July). Assessing Students' Conceptual Knowledge of Computer Networks in Open Wonderland. In 2016 IEEE 16th International Conference on Advanced Learning Technologies (ICALT) (pp. 513-517). IEEE.

TALKS

- "The Human Factors Impact of Programming Error Messages", Invited for seminar at Dagstuhl, February 2022
- "Designing and Conducting Research Studies" at ACM COMPUTE 2020 Conference, December 2020 (along with Shitanshu Mishra, T. G. Lakshmi and Pankaj Chavan)
- "Computing Education Research" at ACM COMPUTE 2019 Conference, University of Goa, October 2019 (along with T. G. Lakshmi, Kavya Alse, Deepti Reddy and Sridhar Iyer)
- "Active Learning: Why, What and How" at IIT Bombay for the TEQIP Faculty Induction Program Session, February 2018.

AWARDS AND HONOURS

- Microsoft Research India Travel Grant - To present research paper at ICSE 2020
- ACM Student Travel Grant - To attend ICER 2018
- IEEE Technical Committee on Learning Technologies Student Travel Award - To present research paper at ICALT 2016

PROFESSIONAL SERVICE

- **Program Committee Member:** ICSE-SEET 2022
- **Reviewer:**
 - Journals: Computer Science Education, Interactive Learning Environments
 - Conferences: SIGCSE 2020-2022, ITICSE 2018-2021, ICLS 2020, AIED 2020, ICCE 2016 TELOTS Workshop
- **Research blog creator and contributor:**
I created a blog - <https://iitbcomputingresearch.wordpress.com> highlighting my department's research and outreach efforts, and have written several articles in the blog.
- **Local Organizing Committee Member** for International conferences: LaTiCE 2016, ICCE 2016, T4E 2016

TECHNICAL SKILLS

Programming Languages:	Java, PHP, Python, R
Web Development:	HTML5, CSS, JavaScript, Node.js