Aditi Mallavarapu

PhD Candidate, Learning Lab
Department of Computer Science
University of Illinois at Chicago

Address: Chicago, IL
Email: amalla5@uic.edu
m.aditi89@gmail.com
Web: http://amalla5.people.uic.edu

Professional Experience

Research Assistant New York Hall of Sciences, NY May 2020 – Aug 2020 Dec 2019 – Jan 2019 June 2019-Aug 2019	Planned and conducted participatory design sessions for dashboard design while iteratively deploying data-collection routines, data mining algorithms, web-based dashboard (full stack in React and MongoDB) and visualizations (D3) for visitor exhibit interaction data.
Teaching Assistant University of Illinois at Chicago, IL Aug 2016 - Present	In-charge of developing curriculum, designing labs and homework assignments, grading, conducting labs, instructing course materials and managing other teaching assistants for the course.
Adjunct Professor University of Illinois at Chicago, IL June 2018-Aug 2018	Lead classes and labs for 30 high school seniors, to pique their interest in Computer Science through an introductory course of Discovering Computer Science.
Instructor University of Illinois at Chicago, IL Jan 2018- Apr 2018	Designed the curriculum and lead classes for Saturday College through UIC Chance Program for high-school students for introductory programming and Computer Science.
Research Assistant New York Hall of Sciences, NY July 2017-Aug 2017	Deployed python scripts to scrape live data from exhibit use, design dashboard visualizations, computer vision routines to analyze video data for a multi-user museum exhibit.
Technical Consultant, Perficient Inc, Chicago, IL Feb 2015–Aug 2016,	Responsible for the design, development and testing of web application and integration of web-based services for a healthcare client.
Network Software Intern, Tarana Wireless Inc., Santa Clara, CA Jun 2013–Dec 2013	Deployed applications to work with SNMP to get information from multiple remote devices in python.

Research Interests

Analytics, Data Mining and Machine Learning applied to data from Educational Environments
Human-Computer Interaction in Open-ended Learning Environments and Complex System Environments
Computer Supported Collaborative Learning

Education

Philosophy of Doctorate (PhD), Computer Science (Human-Computer Interaction, Learning Analytics and Data Mining Concentration)
University of Illinois at Chicago (UIC) (Aug 2016-May 2021 Expected)

Master's in Sciences (MS), Computer Science (Educational Data Mining Concentration)
University of Illinois at Chicago (UIC)
MS Thesis Title: *Developing Computational Methods to Measure and Track Learner's Spatial Reasoning (Aug 2012-Dec 2014)*

Bachelor's in Engineering (BE), Computer Engineering, University of Pune, India (Aug 2007-May 2011)

Technical Skills

Data Mining Libraries/ Software:
Scikit Learn (SkLearn, Pandas python package), Weka, R, NetworkX, DoWhy, OpenCV, OpenPose

Programming Languages:
C/C++, Java, Python

Scripting Languages:
Shell scripting , HTML , JavaScript, CSS, D3 JavaScript Library, React

Databases:
Oracle, MySQL ,SQL, PL/SQL , MongoDB

Research Oriented Courses

Causal Inference and Learning, Machine Learning, Empirical Methods in HCI, Data and Text Mining, Visualization and Visual Analytics.

Honors and Awards

Programmer Analyst Trainee, Cognizant Technology Solutions, Pune, India Aug 2011–Jul 2012	Designed an application to predict user interactions for a big-data tool for a financial client.

Research Projects

Mining Visitor Actions Through Computer Vision: Implement OpenPose algorithm to mine visitor actions and group formations in large immersive multi-user exhibit.

Causal Mining: Use Causal inference to design formative feedback for museum visitors in a complex systems simulation.

Sequencing Connected Worlds: Implemented from scratch a Lag Sequential Analysis algorithm to understand the antecedents and preceding events leading to the critical events and defining trajectories in school group interactions at a museum exhibit.

Participatory Design for Learning Analytics: Conduct participatory design sessions for explainers in museums to design data-driven analytics based dashboard to assist visitors on the floor.

Connect-to-Connected Worlds: Design, implementation and deployment and impact analysis of analytics-based visitor-facing dashboard.

Modeling Connected Worlds: Data-driven model of how museum visitors moved around within and made use of a pilot version of the Connected Worlds exhibit.

Eco-Collage: Designed metrics to evaluate and track the learners' spatial reasoning skills in an Urban planning-oriented game.

Publications

Mallavarapu, A., Lyons, L., (2020) Exploration Maps, Beyond Top Scores: Designing Formative Feedback for Open-Ended Problems. *In Doctoral Consortium of 2020 Educational Data Mining Conference.*

Mallavarapu, A., Lyons, L., Uzzo, S., Thompson, W., Levy-Cohen, R., & Slattery, B. (2019, April). Connect-to-Connected Worlds: Piloting a Mobile, Data-Driven Reflection Tool for an Open-Ended Simulation at a Museum. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (p. 7). ACM.

Mallavarapu, A., Lyons, L., Slattery, B., Shelley, T., Minor, E., & Zellner, M. (2015) Developing Computational Methods to Measure and Track Learners' Spatial Reasoning in an Open-Ended Simulation. *Journal of Educational Data Mining 7(2), 49-82.*

Mallavarapu, A., Lyons, L., Uzzo, S. (In Press) Exploring the Utility of Social-Network-Derived Collaborative Temperature Readings for Informing design and Research of Large-Group Immersive Learning Environments. Journal of Learning Analytics (Special Issue on Collaboration Analytics).

- Awarded the outstanding Teaching Assistant Award at Computer Science, UIC for 2018-2019.
- Awarded the ACM SIGCHI student travel grant to attend the ACM SIGCHI 2019 in Glasgow, UK
- Awarded UIC Chance Program Scholarship, University of Illinois at Chicago, IL
- Awarded the Peter and Deborah Wexler Graduate Student Award Scholarship, University of Illinois at Chicago, IL
- Conference paper selected to become journal article, International Conference of Educational Data Mining, Madrid, Spain June 25-30, 2015
- Awarded the Professor Ram Kumar Scholarship to attend the International Conference of Educational Data Mining Madrid, Spain.
- Awarded the Computer Research Association for Women (CRA-W) Travel Scholarship San Francisco, CA
- Awarded the Grace Hopper Celebration Scholarship for GHC 2014, Phoenix, AZ.
- Awarded Fee-waiver for excelling in performance consecutively for four years, University of Pune, India.

Community Service

- Virtual Conference Chair, Conference on Mobile CHI (In coordination with University of Oldenburg, Germany), 2020
- Reviewer, Conference on Human Computer Interface, 2020
- Judge, 2018 CPS Exhibition of Student STEM Research
- Volunteer Mentor and teacher for the Girls Who Code UIC division, 2017-2018
- Volunteer for hour of code at the Skinner North Elementary School, IL, 2018
- Volunteer, Millet Project at University of California Berkeley, CA for Plant and Microbiology Department, 2015
- Member, Women in Computer Science at UIC.