Preeti Ramaraj

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Education

University of Michigan
Ph.D. in Computer Science and Engineering — January 2017 – April 2021

University of Michigan
Master of Science in Computer Science and Engineering — September 2015 – April 2017
GPA: 3.88/4.0
Relevant Coursework: Advanced Artificial Intelligence, Ethics for Robotics, Natural Language Processing, Human Learning and Memory, Statistical Methods

University of Mumbai
Bachelor of Engineering (Computer Engineering) — August 2008 – May 2012
First Class with Distinction - 75%
Relevant Coursework: Human Computer Interaction, Neural Networks and Fuzzy Logic, Artificial Intelligence

Publications

Preeti Ramaraj and John E. Laird (2018). Establishing Common Ground for Learning Robots. In *RSS 2018: Workshop on Models and Representations for Natural Human-Robot Communication. Pittsburgh, PA*.

Research

University of Michigan (Graduate Student Research Assistant) — May 2016 – Present
My research with Dr. John Laird in the Soar lab focuses on studying methods to establish common ground with Rosie, an interactive task learning (ITL) agent that dynamically learns new tasks. I am interested in understanding and improving non-expert user interactions with Rosie so that the users can easily discover and then employ its capabilities through natural language interaction.

ANFIS based Spam Filtering Model for Social Networking Websites — August 2011 – May 2012
Developed a method in which an adaptive neuro fuzzy inference system (ANFIS) that incorporates the advantages of both the neural networking concepts and fuzzy logic was used to identify spam messages on social networking websites. The paper describing this method was published in IJCA (International Journal of Computer Applications) - April 2012 Edition.

Projects

Mining Insights from Hardware Errata Documents — September 2016 – December 2016
Used errata documentation to identify interesting patterns and conclusions about product bugs, such as common sources of errors. Created a database of over 2,000 different ARM errata and experimented with natural language processing methods ranging from Word2Vec, non-negative matrix factorization and recurrent neural networks.

Motivated Learning – Replication project — January 2016 – April 2016
Replicated project based on the study specified in "*Graham, J., Starzyk, J. A., Ni, Z., He, H., Teng, T. H., & Tan, A. H. (2015, July). A comparative study between motivated learning and reinforcement learning. In 2015 International Joint Conference on Neural Networks (IJCNN)(pp. 1-8). IEEE.*" in order to test the hypothesis that Motivated Learning earns a higher average reward than Reinforcement Learning in the custom dynamic environment specified. The hypothesis was replicated successfully.

Index-based Load Optimization in MySQL — September 2015 – December 2015
Implemented a drop-and-rebuild-indexes scheme around a load operation to automate this operation to improve performance of loading huge data into databases in MySQL

Experience

Intel Labs (Research Intern – Anticipatory Computing Lab) — May 2018 – September 2018
Implemented language and visual transparency mechanisms in the Rosie agent and conducted a user study to test the efficacy of these mechanisms in helping non-expert users identify errors that arise when teaching new tasks.

Microsoft (Software Engineer) — July 2012 – July 2015

- Instrumental in shipping of Release Management for Visual Studio 2013. Took end-to-end ownership of the front-end for the configuration tools for server and deployment agent using WPF and C#
- Contributed to releases in the Dynamics Marketing team. Pilot-tested TDD in individual execution to increase Code-Coverage to 100%. Conducted TDD workshop for the team to push for team-wide adoption.

- As a part of Microsoft Reference Management Center (MRMC) team in the Marketing space, owned October '14 release involving system upgrade from CRM 2011 to CRM 2013 online and creating Power BI reports for the customers and business stakeholders on time despite changing data requirements resulting in smooth transition from current solution.
- End-to-end ownership of migration of 'JADE' application (data warehouse for Microsoft's consulting business) to the internal Singularity hardware platform. Worked on SQL Server 2012 Proof-of-concept to adopt the SQL 2012 Always On feature in JADE.
- Ownership of test phase of release in the Products and Services space involving upgrade of message server from Windows 2003 to Windows 2008 Server R2. Involved in design and scenario discussions, responsible for end-to-end testing for a v1 project, LinkGen. Owned a sprint release and delivered test case execution and daily status reports on time despite resource constraints.

Microsoft (Intern – Software Development Engineer) June 2011 – August 2011

Implemented the Central Data Dictionary – an anytime accessible Azure-based web application in which users can refer to the business descriptions and the various metadata of Warehouse database objects and cube measures.

Skills

Programming: C#, Python, JAVA, C++, VB.NET, SQL, SML (Soar Markup Language)

Web Technologies: HTML, BootStrap, JavaScript, WCF Services, WPF

Tools: Visual Studio, R, MATLAB, Eclipse, Microsoft SQL Server, MySQL, Microsoft Azure, IIS Server, Team Foundation Server, Power BI, Git

Languages: English (Native), Hindi (Fluent), Tamil (Fluent), Marathi (Proficient)

Extracurricular and Volunteering Activities

Michigan AI Symposium – AI and Society, University of Michigan November 2018

Conference Staff

- Led an unconference session for the topic: "AI in everyday life: What is our role as researchers in defining how and the purposes for which AI systems can be used?"

Michigan AI Blog, University of Michigan Fall 2018 – Present

Editor, Curator and Maintainer of blog site

- Created the Michigan AI blog and help curate and edit potential blog posts from contributors in the AI lab.

ECSEL (Ensemble of Computer Science and Engineering Ladies), University of Michigan July 2017 – June 2019

Co-Chair

- Coorganized the first-year mentoring program
- Assisted with organizing meetings for current graduate women students with visiting women professors

Lunch and lab with a Graduate Student, University of Michigan Fall 2015, Fall and Winter 2016-2018

Graduate Student Mentor

- Met with total 21 undergraduate students to discuss graduate studies, potential research opportunities and the application process

Explore Graduate Studies in CSE, University of Michigan September 2017

Volunteer

- Provided 1:1 writing feedback on graduate school application personal statements for participants at the workshop

Sahana, University of Michigan Winter 2016 - Present

Carnatic Vocalist

- Performed at the Swarānjali concert in February 2017

eVidyaloka June 2013- December 2013, January 2014 – April 2014

Volunteer Teacher

- Taught a class of 20 7^{th}-8^{th} grade students – English grammar
- Taught a class of 20 5^{th}-6^{th} grade students – Basic computer skills

BootCamp Committee, MACH IT, Microsoft January 2013 – June 2013

Lead

- Led the internship on-boarding process – organizing technical brown-bag sessions and new employee orientations
- Led the FTE on-boarding process for new hires and incorporated process improvements to events such as the new-hire Bootcamp and LEAP that had direct impact to business