

PRIYANKA MARY MAMMEN

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RESEARCH INTERESTS

: Mobile health, Applied Machine Learning, Mobile computing, Embedded Systems

EDUCATION

- MS/PhD in Computer Science, University of Massachusetts, Amherst Sept, 2019 - Present
- M.Tech in Computational Mathematics, NIT Surathkal Aug, 2014 - July, 2016
- B.Tech in EEE, Cochin University of Science and Technology July, 2010 - June, 2014

RESEARCH EXPERIENCE

- Laboratory for Advanced Software Systems**, University of Massachusetts, Amherst Sep 2019 – Present
- Graduate Research Assistant (under Prof. Prashant Shenoy)
 - Development of AI-assisted community-scale health and behavioural monitoring systems.
- Smart Energy Informatics Lab**, CSE dept., IIT Bombay Oct 2016 - June 2019
- Research Associate (under Prof. Krithi Ramamritham)
 - Energy Efficient Buildings and Thermal Comfort: Deploying and managing sensor networks across the campus, data collection, real time visualisation and analytics on grafana, and inferring insights
 - Energy Optimization in Smart Grids: Conducting campus-wide energy awareness surveys and consumer studies, formulating mathematical models and developing algorithms, following heuristic as well as machine learning approaches , and building a reliable infrastructure for resource allocation in smart grids.
 - Smart Classroom Complex: Application of Image Processing and Machine Learning algorithms in a Real-time System to determine occupancy and automate the appliances in a given space.
- Department of Electrical Engineering**, IIT Bombay May 2015 – Jul 2016
- Research Intern (under Prof. Virendra R. Sule)
 - Development of Solver for XOR Linear Systems that can generate all possible solutions for XOR boolean linear equations.
 - Elliptic Curve Arithmetic over extension field: Implemented an elliptic curve addition over extension field using python.

TEACHING EXPERIENCE

- Teaching Assistant - CS121: Introduction to Problem Solving with Computers** UMass Amherst Current Pos.
- Duties included holding office hours, taking weekly lab lectures and grading.
- Teaching Assistant - CS230: Computer Systems Principles** UMass Amherst Sep 2019 – Dec 2019
- Duties included holding office hours, taking weekly lab lectures and grading.

OTHER WORK EXPERIENCE

- Open Source Solutions Lab**, CSE dept., IIT Bombay Aug 2016 – Oct 2016
- Senior Project Technical Assistant (under Padma Shri Dr. D.B. Phatak)
 - Project: An open source Indian MOOCs platform for massive Indian deployment of MOOCs

GRANTS

- Assisted Prof. Krithi Ramamritham in writing the research proposal entitled - Customer Selection and Control for Demand Response Events in Smart Grids and received funding from Tata Consultancy Services.

PUBLICATIONS

- [1] P.M. Mammen, C. Zaccharia, T. Ochir, A. Trivedi, R. Balan and P. Shenoy “WiSleep: Scalable Sleep Monitoring Using Passive WiFi Sensing” *In submission to ACM SenSys 2020*
- [2] P.M. Mammen, S. Mehta, H. Kumar, and K. Ramamritham “Want to Reduce Energy consumption, Which Floor should I prefer ?” in *the Proceedings of the eleventh ACM International Conference on Future Energy Systems.*, Melbourne, Australia, 2020
- [3] H. Kumar, P.M. Mammen and K. Ramamritham “Explainable AI: Deep Reinforcement Learning Agents for Residential Demand Side Cost Savings in Smart Grids”, accepted at *CoRR abs/1910.08719 (2019)*
- [4] S. Mehrotra, P.M. Mammen, K. Ramamritham, and R. Bardhan “Data Driven Monitoring of Thermal Profile: Towards Sustainable Urban Habitats”, in *the Proceedings of the 10th International Conference on Information and Communication Technologies and Development* , Ahmedabad, India, 2019.
- [5] P.M. Mammen, H. Kumar, K. Ramamritham, and H. Rashid “Want to Reduce Energy consumption, Whom should we call ?” in *Proceedings of the ninth ACM International Conference on Future Energy Systems.* , Karlsruhe, Germany, 2018
- [6] H. Rashid, P.M. Mammen, S. Singh, K. Ramamritham, P. Singh, and P. Shenoy “Want to Reduce Energy consumption? Don’t Depend on the Consumers!” in *the Proceedings of 4th ACM International Conference on Systems for Energy-Efficient Built Environments* , Delft, Netherlands, 2017

- [7] S. Pote, B.K. Lande and P.M. Mammen, “ Elliptic Curve Arithmetic over extension field to intensify security and privacy.” in *the Proceedings of the IEEE International Conference on Wireless Communications, Signal Processing and Networking*, Chennai, India, Mar 2016.

**TALKS AND
PRESENTATIONS**

- Indo - US Symposium on Urban Energy and Informatics (Oral)
- IEEE 2018 Conference on Norbert Wiener in the 21st Century India Events (Poster)

**SCHOLARSHIPS
AND AWARDS**

- Jim Gray Scholarship in Computer Science (2020)
- UMass Amherst CICS Fellowship Award (2019)
- Financial assistance for Masters Program through GATE MHRD scholarship (2014-2016)

**TECHNICAL
SKILLS**

- Programming: C, C++, Python, MATLAB, Octave, R
- Machine Learning: scikit-learn, Pandas, Keras, Tensor-Flow, Theano, PyMC3
- Databases: SQLite, MySQL, MongoDB
- Embedded Platforms: Arduino, Raspberry Pi

SERVICES

- UMass CS Women Social Committee Co-chair (2020)
- UMass CS New Student Committee Member (2020)