Pracheta Amaranath

University of Massachusetts-Amherst

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http://prachetaba.github.io/

Education

- **University of Massachusetts-Amherst** — Amherst, MA
  MS/Ph.D. in Computer Science; GPA: 3.9/4.0 — *Sep 2018 - Present*
- **Rastreeya Vidyalaya College of Engineering** — Bengaluru, India
  Bachelor of Engineering in Electrical and Electronics; GPA: 9.31/10.0 — *Aug 2011 - May 2015*

Research

- **University of Massachusetts-Amherst** — Amherst-MA
  Graduate Research Assistant — *Feb 2019 - Present*
  - Estimating the prevalence of multiple chronic conditions using the principle of maximum entropy
  - Using frequent itemset mining techniques such as market basket analysis to find rarely-occurring disease combinations through sparse data
- **EBSCO Information Services** — Ipswich-MA
  Semantic Analysis and Modeling Intern — *May 2020 - August 2020*
  - Information retrieval and extraction of population and gender metadata from clinical text through machine learning models for identification and classification
  - Topic modeling and polysemy detection for article classification for EBSCO's content database

Industry Experience

- **Massachusetts Dept. of Public Health** — Amherst, MA
  Data Science for the Common Good Fellow — *May 2019 - Aug 2019*
  - Worked on assessing health risks for communities in Massachusetts using social determinants of health
  - Built a model that takes in social determinants as input data, reduces to a smaller subset of indicators (dimensionality reduction and factor analysis) to generate health scores for each community
  - Deployed model to work on various subsets of data (determinants, health outcomes such as cardiovascular diseases, cancer, mortality rates, etc., specific domains such as economy, housing, personal health, violence, environment).
  - Ensured explain-ability of the approach to epidemiologists at the Dept. of Public Health.
- **Cisco Systems (India) Pvt. Ltd** — Bengaluru, India
  Systems Engineer — *July 2015 - July 2018*
  - Responsible for solution design, and testing of routing, switching, wireless and data center and network programmability initiatives.

Teaching Experience

- Teaching Assistant, Programming with Data Structures, Fall 2020

Courses

- Reinforcement Learning, Simulation, Probabilistic Graphical Models, Machine Learning, Neural Networks, Systems for Data Science, Algorithms for Data Science, Research Methods in Empirical Data Science, Distributed and Operating Systems

Programming Skills

- **Languages**: Python, C++, Matlab, Linux shell scripting, Java, MySQL, HTML, JavaScript
- **Frameworks and Libraries**: REST, Flask, Pandas, Numpy, Scipy, Scikit-learn, PyTorch, NetworkX

Projects

- **Mobility Costs for the Internet**: Evaluate costs of mobility associated with future Internet architectures by recreating a parameterized model of the internet routing topology (BGP) and simulating mobility in different scenarios.
- **Neural Program Repair**: Used convolutional neural networks to localize bugs in small Java programs and suggest one-line patches

Conferences and Presentations

- **INFORMS Annual Conference**: Estimating the prevalence of Chronic Diseases using the principle of Maximum Entropy
- **Grace Hopper Conference for Women in Computing**: 2019
- **Women in Data Science - Central Massachusetts**: Estimating Chronic Diseases using the principle of Maximum Entropy
- **Data Science for the Common Good: Event Showcase (UMass-Amherst)**: Assessing health risks for communities in Massachusetts (in collaboration with Mass. Dept. of Public Health and Data Science for Common Good)

Service

- Masters Co-Chair, CS Women, UMass-Amherst 2019 – 2020
- Student Steering Committee, Researchers, Educators and Business Leaders of Massachusetts (REBLS), 2019-2020