Aparna Dhinakaran

aparnadhinak@gmail.com   aparnadhinakaran.com   Github:AparnaDhinakaran

EDUCATION

2019-Present	PhD in Electrical and Computer Engineering
	Cornell University
	Research Interests: Computer Vision
2012-2016	BSc in Electrical Engineering and Computer Science
	University of California, Berkeley

AWARDS & HONOURS

HBX	Harvard x Uber Executive Education Certificate for Leadership
HP Fellowship	Cornell Engineering Department PhD Fellowship (accepted)
PhD Fellowship	UCLA EE Department PhD Fellowship (declined)
Lawler	UC Berkeley EECS Department Award
Patterson	1 of 4 UC Berkeley students awarded Hutto Patterson Fellowship
CREU	1 out of 15 team finalists nationwide for CRA-W research funding
Regents	Merit-based scholarship awarded to top 1.5% of UC Berkeley applicants
Leadership	CAL Alumni Association's Most Prestigious Merit-Based Scholarship

WORK EXPERIENCE

Uber
2016-2019
Software Engineer on Marketplace Forecasting Team.
I led design and development of Uber's first model lifecycle management system for running data science and machine learning models computations at scale to power new Uber dynamic pricing algorithms. I also designed and developed Uber's real-time events, weather, and holiday source of truth used in forecasting demand and supply around the world. I contributed to the real-time hexagon based geospatial system that is used at the core of the Uber marketplace algorithms for optimal drivers positioning, surge pricing calculation, dynamic cities clustering, operations, and data analyses.

Apple
Summer '15
Software Engineer Intern on Emerging Technologies Team.
I worked on Passive RFID Tag localization algorithms. I was selected as a top intern to present my research project to Niall O'Connor, Apple CIO.

TubeMogul
Summer '14
Machine Learning Engineer Intern.
I developed clickbot detection algorithms for differentiating between humans and bots for advertising campaigns.

PUBLICATIONS

Chandrayee Basu, Julien J Caubel, Kyunam Kim, Elizabeth Cheng, Aparna Dhinakaran, Alice Agogino, and Rodney Martin. **Sensor-based predictive modeling for smart lighting in grid-integrated buildings**. In *IEEE Sensors Journal*, 2014.

Chandrayee Basu, Benjamin Chen, Jacob Richards, Aparna Dhinakaran, Alice Agogino, and Rodney Martin. **Affordable and personalized lighting using inverse modeling and virtual sensors**. In *SPIE*, 2014.

Aparna Dhinakaran, Mo Chen, Glen Chou, Jennifer Shih, and Claire Tomlin. **Multi-Vehicle Collision Avoidance via Hamilton-Jacobi Reachability**. In *CDC*, 2017.

Research Experience

Sept 2015 - Oct 2016	**Research Assistant with Prof. Claire Tomlin, UC Berkeley** *A Hybrid Framework for Multi-Vehicle Unstructured Collision Avoidance* Developed safety guarantees for n-vehicles in unstructured flight. We employed Hamilton-Jacobi (HJ) reachability to detect potential conflicts among vehicles, provide control to cooperatively resolve multi-vehicle conflicts, and allow vehicles not in potential conflicts to move in an unrestricted manner. *Unmanned Aerial Vehicle Traffic Management* Worked on hardware implementation of platooning, a structural design to model groups of UAVs in a single-file formation. The proposed implementation has several liveness controllers and a safety controller, based on HJ reachability. Employed Crazyflie 2.0 Testbed for proof of concept. *Regression-based Inverter Control for Optimal Power Flow & Voltage Regulation* Worked on systematic and data-driven approach to determine reactive power inverter output as a function of local measurements for 3-Phase decentralized systems. *Cal Renewable and Adaptive Energy Micro-Grid Analysis* Worked on spatial analytics of distributed energy generation, micro-grid economic analysis, and energy disaggregation to address the energy challenges facing communities in the developing world.
Aug 2014 - May 2015	**Research Assistant with Prof. Tapan Parikh, UC Berkeley** *Information Technologies for Agriculture* Designed smart rainfall measurement system to increase Kenyan smallholder farmers' access to markets. Analyzed data for Avaaj Otalo, a voice-based social media for Gujarat farmers.
Feb 2013 - May 2014	**Research Assistant with Prof. Alice Agogino, UC Berkeley** *Smart Lighting on the Smart Grid* Developed a new lighting system, that builds a predictive model of a room to effectively allow lights to adapt to occupant demands. Developed indoor lighting inverse model, linear regression models and user-friendly installation program.

Teaching Experience

Fall '13	Teaching Assistant for Math 53 — Multivariable Calculus.
Spring '14	Teaching Assistant for Math 54 — Linear Algebra & Differential Equations.

Technical Skills

Languages	Go, Python, Java, C++, C, Matlab, LaTeX.
Software	Unix/Linux, Robot Operating System (ROS), Cassandra, Hadoop MapReduce, Numpy, Scipy.

Outreach & Activities

A.W.E	Mentored younger women in Association of Women in EECS
NERDS	Mentored & led sections for STEM students from diverse backgrounds.
Girls Who Code	Lead weekly computer science lessons for Oakland high school girls