AMAN DHAR

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Education

University of California, Berkeley **Aug 2015 – May 2020**

M.S. Electrical Engineering & Computer Science, 2020, 3.92 GPA

Thesis: Object Tracking for Autonomous Driving Systems; advised by Prof. Joseph Gonzalez

B.A. Computer Science, 2019, 3.77 GPA

Advanced Courses: AI, Machine Learning, Optimization, Probability, Deep RL, AI Systems, NLP

Research

Graduate Student ML/AV Researcher – RISE Lab, UC Berkeley **Aug 2019 – May 2020**

- Used TensorFlow & PyTorch to implement, extend, and train object tracking models for Pylot, an autonomous driving platform that interfaces with the CARLA simulator
- Added Pylot components to record tracking metrics, collect data, manage tracker parameters, etc.
- Created simulated driving scenarios and evaluated trackers under several configurations in each

Undergraduate ML/AV Researcher – RISE Lab, UC Berkeley **Mar 2018 – May 2019**

- Used TensorFlow to design, implement, and train convolutional & recurrent neural networks for autonomous driving tasks (path planning, motion prediction, etc.) in FLUIDS/CARLA simulators
- Ran experiments to evaluate low-resolution state representations for planning and prediction tasks

Machine Learning Research Intern – Berkeley SETI Research Center **Sep 2017 – May 2018**

- Generated artificial datasets of fast radio bursts (FRBs) and trained a Mask R-CNN model implemented with Keras/TensorFlow to detect FRBs with > 90% accuracy on true pulses

Work Experience

Software Developer – Brilliant Home Technology **June 2020 – Present**

- Full-stack engineering on integrations team using Python, C++, QML/JavaScript

Teaching Assistant – Data Science 100, UC Berkeley **Jan 2018 – Dec 2019**

- Taught data science topics (web scraping, data cleaning, visualization, transformation, etc.) and machine learning topics (regression, classification, feature engineering, etc.)
- Held weekly discussion sections, lab sections, office hours, & occasional exam review sessions
- Developed new assignments, exam questions, and tools as class grew from 250 to 1000+ students

Software Developer Intern – Brilliant Home Technology **May 2019 – Aug 2019**

- Fully implemented UI & backend for several Sonos speaker features on Brilliant Control (smart light switch that connects & controls smart home products) using C++, QML/JavaScript, Python
- Used Python to write server/backend code to integrate smart door locks with Control

May 2018 – Jul 2018

- Developed UI on Control for all thermostat-related actions using C++, QML/JavaScript
- Used Python to write server/backend code for Nest, Ecobee, & Honeywell smart thermostats

Projects

Colorimetric Detection of pH Strips **Oct 2017 – Dec 2017**

- Used scikit-learn & OpenCV to develop a model to estimate pH of a solution from pH test strip images
- Co-wrote research report with two students

Berkeley Map, Davis Map & Stanford Map **Jan 2016 – Dec 2017**

- Utility iOS apps for navigating university campuses, ~3,200 total App Store downloads

Skills

- **Languages:** Python (including TensorFlow, PyTorch, NumPy, Pandas), Java, R, SQL, C/C++, MATLAB
- **Tools:** Git, Jupyter/iPython/Colab, Qt Creator, ROS