Kaahan Radia

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Education

2017–2021 **B.A. Computer Science**, *University of California, Berkeley*.
GPA: **3.52**

"Optimization", "Databases", "Structure and Interpretation of Computer Programs", "Data Structures", "Designing Information Devices and Systems I & II", "The Great Ideas of Computer Architecture"

Experience

2017–Present **Research Assistant**, *RISELab*, Berkeley.

Currently working on novel perception and planning algorithms for a full self driving car pipeline

- Using depth estimation, intermediary representation, and lidar object detection to create an RGB to Bird's Eye View real-time segmentation algorithm for planning

Worked in collaboration with UCSF to create better solutions to EKG readings. Primarily for use in hospitals to help identify diseases that doctors may miss. Researching under Joseph Gonzales and Ion Stoica

- Used modern interpretability techniques (such as LIME) to add a layer of trust between the physician the model readouts. Working on novel interpretability techniques using VAEs.

Worked with the Ray team to implement and improve various algorithms for the system

- Reviewed and engineered improvements to Stack Neural Module Network, a fully differentiable approach to the Visual Question Answering task (Computer Vision)
- Implemented various scheduling algorithms (like Population Based Training from Google) under the Ray system (using Python, Tensorflow, and Java) to increase the efficiency of hyper-parameter search; Implemented models like LSTM

2019 **Computer Vision Intern**, *Ericsson*, Santa Clara / San Francisco.

Conducted exploratory research on low-shot image classification on high-variance images. Using the algorithm developed, the team created a fully autonomous solution to help solve a billion dollar problem at Ericsson

- Created a data pipeline to gather images from OpenStreetCam, feed through object identifier algorithms, and process in our few-shot Convolution Distance ProtoNet
- Implemented a variety of deep learning papers (*RelationNet*, *Fully Attentional Networks*, *Transformer Networks* and more), but mainly worked with *Prototypical Networks* in PyTorch for use in few-shot classification. Debugged poor performance and added novel distance metrics to improve performance past those stated in the paper

2018 **Machine Learning Research Intern**, *Ericsson*, Santa Clara.

Worked to create a distributed information system to efficiently pass information to thousands of reinforcement learning agents to train online in parallel

- Designed system from ground up, including algorithms to group similar nodes (agents), schedule information distribution, and the basic reinforcement learning agents themselves.
- Worked with a team of three, created and presented information system as well as the results and scalability of the entire venture

Projects

2019 **Bibliotheca**, *React, Web, Writing*, bibliotheca.surge.sh.

An interactive storytelling experience to implicitly teach programming through magic, interesting narratives, and technology. Built for the web, and one day to be used in classrooms to get students excited about programming and technology.

2018 **Playlist DJ**, *Javascript, Python, Web*, kaahan.pythonanywhere.com.

Created a tool for Spotify users that allows them to sort playlists according to different attributes of songs within. Uses graph approximation, a NoSQL database, improvements on existing object sorting algorithms, and UI/UX design

Skills

Languages Python, CSS, HTML, Javascript, Java, Swift, C, SQL

Libraries Ray, PyTorch, Tensorflow, Numpy, Scikit-Learn, MatPlotLib, React, Node.js