Eric Lin

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EXPERIENCE

CRUISE | Senior Applied Scientist — Aug 2022 - Present | San Francisco, CA, USA

- Owned multiple iterations of a new analytical guarantee system for the Cruise planner output, as well as leading the cross-team development of the evaluation tools to measure success and impact. This new system uses high precision inputs to guard against unsafe Cruise car behavior, solving up to 80% of problem scenarios per release.
- Implemented data metrics and visualization tools which allowed the removal of up to 50% of some training datasets in our prediction models without affecting performance. This saves costs on data storage, decreased training time by 8%, and improves model evaluation reliability.
- Improved safety around motorcycles by 26% through targeted data augmentation and model improvements. [1]
- Implemented new loss functions and uncertainty representations in our predictions models, leading to improved model metrics (L2 and log-likelihood) and up to 20% safety increases in targeted datasets.
- Designed and experimented with heuristic anomaly models for out of distribution predictions. These new policies allowed us to quickly resolve 55% of our blocking tests, reducing risk on the road. Continued iteration on these policies guard the Cruise car against rare events our models struggle to predict.

CRUISE | ML / Robotics Engineer — Aug 2020 - July 2022 | San Francisco, CA, USA

- Worked on heuristic models and predictions to improve the Cruise car's behavior around occlusions, improving safety and comfort in the case of emerging vehicles and pedestrians.
- Shipped multiple releases of our prediction models by improving uncertainty representations and implementing new loss functions, leading to improved model accuracy.
- Created metrics and dashboards to track model and heuristic performance post releases.

CRUISE | Software Engineering Intern — Sept 2019 - Dec 2019 | San Francisco, CA, USA

- Developed new metrics dashboards for the perception team's core metrics, allowing for faster and more trustworthy evaluation of new changes.

HUAWEI | Software Engineering Intern — Jan 2019 - Apr 2019 | Markham, ON, CA

- Researched techniques to improve model accuracy on distributed and single node machine learning systems.
- Helped to implement methods to ensure data parity between nodes during training.

AECON RESEARCH TEAM | Software Engineering Intern — Sept 2018 - Aug 2018 | Waterloo, ON, CA

- Developed tools and features to integrate digital verification of construction components in fabrication plants.
- Implemented a new verification process for the alignment of construction pipes, published in a civil engineering journal.

PROJECTS

BAD MAHJONG | Online Game

June 2020

Bad Mahjong is an online multiplayer Mahjong game for up to four players. The game uses a Flask backend, a React frontend, and socket.io to create lobbies, invite friends, and connect players in a match of Mahjong.

EDUCATION

UNIVERSITY OF WATERLOO | BMath in Computer Science

Class of 2020 | Waterloo, Ontario, Canada

SKILLS

LANGUAGES

Python • C++ • SQL • Javascript • Bash

TECHNOLOGIES

Git • Numpy • Pandas • Pytorch • Matplotlib • Tensorflow • React • Bazel

[1] https://x.com/kvogt/status/1651677693124169729