

# Eric Lin

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## EXPERIENCE

### CRUISE | SENIOR APPLIED SCIENTIST

AUG 2022 - PRESENT | SAN FRANCISCO, CA, USA

- **Led 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 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 to **remove up to 50% of some training datasets** without affecting performance. This resulted in an **8% reduction in training time** and improved evaluation reliability.
- **Improved safety around motorcycles by 26%** through targeted data augmentation and model improvements.<sup>1</sup>
- **Introduced 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 implemented heuristic anomaly models** for out of distribution predictions to **quickly resolve 55% of blocking tests**. Continued policy iterations safeguard Cruise cars against difficult to predict scenarios.

### 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 reliable 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 • Jupyter • Bazel

<sup>1</sup><https://x.com/kvogt/status/1651677693124169729>