⟩ Shun Rao

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srao.me

skills

Python • C++ • C • Javascript • Go • Node.js • TensorFlow • OpenCV • Docker • HTML/CSS

experience

Hive AI   **San Francisco, California**
Software Engineering Intern   *May 2018 - Aug 2018*

- Led development of C++ **face recognition pipeline,** achieving **real-time** inference on **16 concurrent video streams** through frame batching and multithreaded TensorFlow sessions. Combined **face detection, keypointing and embedding** models with OpenCV processing to reach **95%** recognition accuracy
- Proposed and built Python **distributed Tensorflow platform**, enabling fast async multi-GPU/server training
- Implemented optimized **vector kNN** algorithm to search indices with **100k facial embeddings** in under 50ms
- Built thread safe C++ **GPU memory manager** to handle 1000+ parallel RPC calls to TensorFlow model server

dominKnow Learning Systems   **Ottawa, Ontario**
Software Developer Intern   *Jun 2016 - Aug 2017*

- Built software simulation platform in **Java,** featuring linear-time **version control** for **Elasticsearch** documents
- Automated **LESS compilation** for authoring platform**,** also optimizing compilation for a speedup of **500%**

Waterloop Hyperloop Design Team   **Waterloo, Ontario**
Communications Software Co-Lead   *Sept 2017 - March 2018*

- Spearheaded **data pipeline design** for three way communication between pod, relay servers and pilot controls
- Wrote multiplexed UDP library in **Go** to increase data throughput by **50x** and reduce latency by **90%**

University of Ottawa Heart Institute   **Ottawa, Ontario**
Mobile Development Lead   *Feb 2016 - Feb 2017*

- **Led development** of pager app to prepare med students for residency by simulating surgical incidents
- Presented at the Canadian Conference on Medical Education & American Association of Surgical Education

projects

Order AI   *github.com/shunr/order-ai*

- **Conversational agent** platform for takeout backed by restaurants in Waterloo and Toronto
- Built centralized **Node.js** server for speech processing and SIP call routing from each restaurant

Orpheus   *github.com/shunr/orpheus*

- Machine learning experiment in **Node.js+Python** that trains a **online classification model** to learn individual **music tastes** using interactive feedback to Spotify previews

education

University of Waterloo

Software Engineering Class of 2022

- 91.8/100 cGPA (Top Decile)
- Dean's Honors List (All Terms)

achievements

2017   HackerRank 97th Percentile Contest Rating
2017   USA Computing Olympiad Platinum Division
2017   Waterloo President's Scholarship of Distinction
2017   ECOO Programming Contest Eastern Ontario Champion