

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 on two GPUs. Combined **face detection, keypointing and embedding** with OpenCV processing to reach **95%** recognition accuracy
- 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
- Implemented **gRPC** service in Python and C++ for dynamic swapping of TensorFlow serving models

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