Shun Rao

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experience

dominKnow Learning Systems
Ottawa, ON
Software Developer Intern — Jun 2016 - Aug 2017
- Led full-stack development of a HTML5 **software simulation** platform using **Java** (Spring) and **Elasticsearch**
- Drafted and implemented **linear-time JSON diff** version control system
- Automated a **LESS theming engine** with optimizations to increase compilation speeds by **500%**

Team Waterloop
Waterloo, ON
Communications Software Co-Lead — Sept 2017 - March 2018
- Spearheading design of new safety critical communications ar chitecture for Goose III, Canada's only **Hyperloop Competition 3** pod
- Developing a multiplexed QUIC pipeline in **Go** to increase data throughput by up to **50x** and reduce transmission latency by **90%** compared to Goose II

University of Ottawa Heart Institute
Ottawa, ON
Mobile Development Lead — Feb 2016 - Feb 2017
- **Led cross-platform development** of pager app to prepare med students for residency by simulating surgical incidents
- Managed cloud storage and processing of responses through **Firebase**
- Project presented at the **Canadian Conference on Medical Education** and the **American Association of Surgical Education**

projects

Order AI
github.com/shunr/order-ai
- Startup prototype **conversational agent** platform for takeout restaurants
- Built centralized server for **speech processing and call routing** from each restaurant, and **hardware interfaces** for existing point-of-sale systems
- Backed by two restaurants in Waterloo and Toronto with testing agreements

Orpheus
github.com/shunr/orpheus
- Machine learning experiment in **Node.js** that trains a **online classification model** to learn individual **music tastes** using interactive feedback to Spotify previews

Fluxnote
devpost.com/software/fluxnote
- **Node.js** app that uses a phone to turn any surface into an accessible **graphics tablet** using 3-axis magnetic field strength data.
- Won **3rd place** overall at **ECHacks 2017**

muBot
github.com/shunr/mubot
- Raspberry Pi robot in **Python** that dances to any song from YouTube
- Implemented **parallelized FFT** for near real-time beat detection on a low-power processor

skills

Fluent
Python, Javascript, Node.js, C++, Git, HTML5, Linux

Working Proficiency
C, Java, Go, jQuery, MongoDB

Getting There
Elasticsearch, Tensorflow, Android, React

accomplishments

2017	HackerRank 97th Percentile
2017	USA Computing Olympiad Platinum Division
2017	Waterloo President's Scholarship of Distinction
2017	ECOO Programming Contest Eastern Ontario Champion
2016	Canadian Federation of Medical Students Student Initiative Grant
2016	CCC Certificate of Distinction
2015	TechU.me Ottawa AppJam Winner
2015	OSSTF Student Achievement Awards, Provincial Winner

education

University of Waterloo
Candidate for Bachelor of Software Engineering
2017 - 2022
- 3.98 GPA (Top Decile)
- Term Dean's Honors List