JULIAN MAINGOT
4B Computer Science

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EXPERIENCE

Software Engineering Intern, Facebook   May - Aug 2018
WhatsApp VoIP Team
- Validated objective video quality metric by building C and Python utilities to simulate video processing
- Implemented metric in a cross-platform C library running on billions of devices
- Experimented with video processing optimizations to improve quality during calls

Software Developer Intern, FreshBooks   May - Aug 2017
Engineering Efficiency Team
- Developed Jenkins CI pipeline features (plugin system for integrating new services, developer notifications for events and status updates, etc.) in Groovy to streamline the development experience
- Collaborated with a group of developers and designers in a company hack-week to build a note-taking web app that allows real-time collaboration between meeting participants using Node.js, Express and Vue.js

Web Developer Intern, Flynn   Jan - Apr, Sept - Dec 2016
Web Development Team (Internal Tools)
- Developed a feedback manager using Angular, $C^\sharp$ and SQL with continuous deployment to Azure
- Implemented data views for a web dashboard where the service team visualizes project-related metrics
- Built REST API calls in $C^\sharp$ which process data from MongoDB and SQL to create views in the dashboard
- Reduced dashboard load time from 20s to 1s by optimizing MapReduce operations and SQL queries

Co-Founder, Max Robotics Inc.   May 2015 - May 2017
- Taught VEX IQ robotics and Java programming courses
- Managed a team of 6 instructors and executed a community marketing strategy to grow customer base and brand

PROJECTS

Real-Time Microkernel, CS 452: Real-Time Programming   Jan - Mar 2018
- Built entire real-time microkernel for an ARM microcontroller in C and assembly
- Implemented context switching, scheduling, memory management, IPC, IO, interrupt handling and user mode

RPC Library, CS 454: Distributed Systems   Mar 2018
- Created RPC library including client and server APIs and an administrative server written in C++
- Implemented availability error handling, server load balancing and routing calls between clients and servers

Network File Transfer, CS 456: Computer Networks   Oct 2017
- Created a Python utiltiy to transfer files between peers over UDP
- Implemented reliable data transfer using Go-Back-N and Selective-Repeat protocols

Product Lifecycle Simulation, CS 343: Concurrent and Parallel Programming   Dec 2017
- Built a simulator for product production, distribution and consumption through μC++ multi-threading
- Performed interprocess communication using the Administrator model and Futures

EDUCATION

University of Waterloo, Bachelor of Computer Science   Sept 2014 - Apr 2019 (expected)
- Relevant Coursework: Real-Time Computing, Distributed Systems, Networks, Concurrency, Algorithms, OS
- President's Entrance Scholarship

LANGUAGES AND FRAMEWORKS
- C, C++, Python, Java, JavaScript, Git