

# R. BENJAMIN UPENIEKS

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## EXPERIENCE

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### Ford Motor Company

May – September 2017

*Software Developer Co-op – C, C++, Qt, QNX*

- Developed the backend for the in-vehicle touchscreen system with Qt.
- Refactored and decoupled an existing monolithic code base to provide a modular and more robust interface for vehicle services to request alerts and notifications.
- Designed and implemented notification arbitration, queueing and suppression subsystems in highly governed environments and exposed the API to internal clients in C and C++.
- Wrote unit tests for notification API business logic and exception flows using Google Test & Google Mock.

### Contribution to 4th-Year Engineering Design Team

February – April 2017

*Diaphyseal Bone Manufacturing – C++*

- Tasked with analyzing open-source C++ 3D slicing software to improve the deconstruction of SolidWorks models into functional G-Code for 3D printing
- Proposed a solution to increase the efficiency of printing diaphyseal bone grafts on cylindrical print beds.

## PROJECTS

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### TinyHFS – Hierarchical File Storage System

*Arduino – C*

*github.com/Bupenieks/TinyHFS*

- Developed and implemented a low level, navigable, bitwise hierarchical file system on an Arduino microcontroller.
- Complete with full CRUD and auxiliary UNIX-like operations.

### BeatSync

*Android – Java*

*Google Play Store – github.com/Bupenieks/BeatSync*

- Created an app to synchronize rowing strokes with songs from your Spotify playlists using accelerometer data.
- Includes auxiliary music player functionality with play/pause, track seeking, and playlist selection.

### CoffeeHouse

*Node.js – JavaScript – Hack the North 2017*

*github.com/Bupenieks/CoffeeHouse*

- Writing the backend for a lightweight, Git-style version control service to enable open-source music creation.

### Scrabble

*Node.js, MongoDB – JavaScript, Python*

*github.com/Bupenieks/Scrabble*

- Created an online two-player Scrabble clone in Node with client connection powered by MongoDB and websockets.
- Equipped with a “Best Word” algorithm written in Python to determine optimal tile placement.

## LANGUAGES & TOOLS

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**Strong:** C++, Qt, Node.js, JavaScript, Java, Android SDK, Git  
**Experienced:** C, Python, NumPy, Scala, MongoDB, jQuery, HTML5, CSS3, L<sup>A</sup>T<sub>E</sub>X  
**Familiar:** Swift, iOS, Django, Android NDK, Vagrant, QNX, Bash, SQL

## EDUCATION

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**University of Waterloo**, Candidate for *Bachelor of Software Engineering* (BSE); 2A

Cumulative Average : **85.17%** – 1A Dean’s Honour List

Overloading courses with the intent of earning a *Joint Honours Degree in Statistics*

**Relevant Coursework :** Coursera Deep Learning Specialization

## AWARDS

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- Recognized by the 1A term’s **Dean’s Honour List**
- University of Waterloo **Engineering Entrance Scholarship & President’s Scholarship of Distinction**
- **SAT** Subject Tests Math 1: 800 - Physics: 800 - **Perfect scores**
- **ACT** Math: 36 - Science: 36 - **Perfect scores**; English: 34 - Reading: 34 - Writing: 11 - 99th percentile overall
- Trained and competed at the highest level in Canada as a soccer goalkeeper.
- **Toronto FC & Ontario Provincial Soccer Team** – Goalkeeper for Team Ontario and Toronto FC Academy