Bojan **Gavrilovic**

Electrical Engineer · Embedded Expert

25 Viking Lane, Toronto, ON, Canada

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Summary

Embedded systems engineer with 5+ years of experience in both hardware and firmware design. I have a successful track record of developing products from the ground up in a broad range of industries from health care to automotive. I am passionate about my work and strive to create new technologies using state-of-the-art engineering tools and concepts.

Work Experience

Autzu Inc.

Toronto ON, Canada

Firmware/Hardware Engineer — *Jun. 2019 - Present*

- Leading the full design of a vehicle telematics device used to collect data for predictive maintenance, as well as vehicle control (lock/unlock)
- Writing the following components for the embedded software (ARM, Embedded C, RTOS)
  - Drivers for LTE Modem to communicate over MQTT
  - I2C communication to multiple sensors
  - UART communication to GPS, Bluetooth, LTE Modem, and OBD interpreter
  - CAN communication for vehicle control
- Designing the following components for the telematics device
  - Power management system, GPS, LTE, Bluetooth, IMU, OBD and CAN communications
- Mentoring junior engineers in proper hardware and software design methodologies
- Leading design reviews for both hardware and software development

Toronto Rehabilitation Institute

Toronto ON, Canada

Research Engineer — *Dec 2016 – June 2019*

- Developed and prototyped wearable device to collect physiological signals during sleep (ARM, Embedded C)
- Developed, implemented and verified algorithms to monitor sleep and diagnose sleep apnea (Matlab)
- Developed and prototyped portable bioelectrical impedance system and integrated our design with smart textiles developed by Myant Inc.

Toronto Rehabilitation Institute

Toronto ON, Canada

Research Student — *Sept 2014 – Aug 2016*

- Designed and tested system to measure intra- and extra-cellular fluid in humans using bioelectrical impedance spectroscopy (Embedded C, Matlab)
- Published a multi-variate regression model for predicting risk of fluid related sleep apnea in the journal of Sleep Medicine

The Hospital for Sick Children

Toronto ON, Canada

Software & Hardware Developer Intern — *2016 - 2017*

- Developed, prototyped and tested simulator for laparoscopic surgery (Java, Embedded C)
- Designed statistical models to differentiate novice surgeons from expert surgeons
- Wrote and published technical document outlining the design of the simulator

The Hospital for Sick Children

Toronto ON, Canada

Research Student — *May 2015 – Sept 2015*

- Analyzed EEG data on children suffering from traumatic brain injury and published results
- Developed software to perform connectivity analysis on EEG data

Education

University of Toronto

Toronto, ON, Canada

MHSc, Clinical Engineering — *Sept 2014 - Aug 2016*

McMaster University

Hamilton, ON, Canada

BEng in Electrical Engineering — *Sept 2010 - May 2014*

- Graduated Summa Cum Laude

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Work Experience

Autzu Inc.
Toronto ON, Canada

Hardware Engineer
Jun. 2019 - Present

Autzu Inc. is a drive-sharing startup developing technologies to enable better vehicle control and sharing

- Created, led, and mentored team of three engineers in proper hardware and software design methodologies
- Implemented design reviews and continuous integration for both hardware and firmware development
- Successfully launched the company's first telematics device to over 50 vehicles
- Designed and built the initial prototype/minimal viable product which allowed us to collect data from vehicles for predictive maintenance, as well as remote vehicle control (lock/unlock)
- Performed in-house pre-compliance EMC testing, supply chain management for PCB assembly, and worked closely with multiple fabrication houses to ensure proper manufacturing and testing of our design
- Collaborated closely with the software team to develop communication protocol with our system backend
- Led the design of a custom bootloader to allow for Over The Air firmware updates

Toronto Rehabilitation Institute
Toronto ON, Canada

Research Engineer
Dec 2016 – June 2019

- Managed a $1,000,000 grant to build the world first sound-proof research sleep laboratory
- Designed and prototyped a wearable device to collect physiological signals during sleep
- Developed, implemented and verified algorithms to monitor sleep and diagnose sleep apnea
- Developed and prototyped portable bioelectrical impedance system and integrated our design with smart textiles developed by Myant Inc.

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Technical Skills

- Digital/Analog system design
- Schematic design and PCB layout
- Hardware testing and debugging
- Firmware development for real-time embedded systems (Embedded C, ARM, RTOS)
- Signal processing and algorithm development (Matlab, Python)
- Basic web development (HTML, CSS)