Krisztian **Kurucz**

3B Mechatronics Engineering

Contact

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Languages

English
Hungarian

Software

AutoCAD
Altium
Cadence
EAGLE
LTSpice
PADS
Solidworks
Xilinx Vivado
Altera Quartus
Microsoft Office
Linux

Hardware

Xilinx & Altera FPGAs
Arduino
BeagleBone
Raspberry Pi
ARM Cortex
PIC
Particle Photon
ESP8266
Teensy

Education

Candidate for Bachelor of Applied Science (BASc) — University of Waterloo, Waterloo, ON
in Mechatronics Engineering — Expected May 2018

- Achieved a competitive rank of 26th of 106 students during the 3B term, maintaining a cumulative average of 84.7%
- **Relevant Courses:** Microprocessors and Digital Logic, Computer Structures and Real-Time Systems, Sensors and Instrumentation, Microprocessor Systems and Interfacing, Actuators and Power Electronics, Automatic Control Systems, and Autonomous Mobile Robots

Experience

SQUARE INC — Toronto, Ontario
Electrical Engineering Intern — May 2017 - August 2017

- Led the complete electrical characterization of the analog front-end of a custom in-house ASIC meant for secure payment processing
- Contributed to internal processes by using Python and other Windows scripting tools to design and implement a measurement automation system to help complete characterization tasks in less than half the time
- Won first place in an intern hack week for creating a low-cost, Square POS integrated restaurant pager system that was then presented to the CEO and upper level staff; I was responsible for all of the electrical component selection and schematic design in a multidisiciplinary team of five interns
- Conducted thorough experimentation on the viability of using various SMD inductors to emulate a magnetic credit card swipe for the design of advanced internal test fixtures, as well as contributed to the schematic design of a PCB that leveraged the results of my experimentation

ARISTA NETWORKS INC — Santa Clara, California
Hardware Engineering Intern — September 2016 - December 2016

- Led development of Integrated Power Shelf (IPS) internal project, heavily contributing to the hardware and software design of the 1RU BeagleBone-controlled power system
- Expanded and prototyped the software platform for the IPS, adding SNMP functionality, a Flask-based web interface, and software telemetry capabilities (through I2C)
- Conducted a comprehensive hardware evaluation of a new digital power management IC, testing functionality, ensuring compatibility with new designs, and culminating in a formal report

IMAGINE COMMUNICATIONS — Toronto, Ontario
Hardware Designer — January 2016 - April 2016

- Assisted with VHDL design and simulation for Xilinx-based FPGAs centered around real-time audio and video processing
- Revised and updated electrical schematics with Cadence EDA tools to replace an IC on an existing production board, then tested and verified the successful redesign
- Analyzed and debugged a defective board through examining the schematic, conducting electrical measurements through an oscilloscope and multimeter, and logical circuit troubleshooting
- Conducted SFP+ compliance testing to ensure signal integrity on pre-production boards as well as wrote the associated formal compliance reports

KEPSTRUM INC — Vaughan, Ontario
Junior Engineering Intern — May 2015 - August 2015

- Led development of a major Windows application in C# meant to facilitate internal engineering processes, and completed a working prototype in less than two months
- Contributed to software and PLC test stand HMI development on-site at Kepstrum's technical facilities in Austria
- Initiated changes to existing business practices through the introduction of a formal revision control system as well as a centralized knowledge-base for the company

Programming

Java, C#, C++
Python 2.7 & 3
HTML & CSS
JavaScript, Node.js
PHP & SQL
VHDL & Verilog
PLC Programming
Embedded C
MATLAB
Assembly

Awards

WatPD Engineering Entrance Scholarship — University of Waterloo, Waterloo, ON
Received for academic and extracurricular excellence — September 2013

Governor General's Academic Bronze Medal — King City Secondary School, King City, ON
Received for achieving the highest average upon graduation — June 2013

Extracurriculars

Electronics and Hardware Prototyping — 2013 - Present

- Submitted a fully integrated hardware and software project called AirFuse to IntelHacks 2017, where I worked on the schematic design, hardware prototyping, and 3D printed case design (more information at **www.devpost.com/software/airfuse**)
- Designed and prototyped practical circuits such as an AUX-to-Bluetooth module, various power supplies, and addressable LED Wi-Fi string lights for room decoration, occasionally taking the extra steps to route and layout a PCB to be sent out for fabrication
- Gained experience in designing and assembling mechanical systems through construction of a 3D printer, custom wooden rack, and other 3D printed project enclosures

Self-Guided Programming and Software Systems Projects — 2012 - Present

- Completed a prototype Android application for the AirFuse project submitted to IntelHacks 2017, leveraging a backend API in Django to control the purpose-built hardware through Wi-Fi
- Designed and created my personal website, www.krisztiankurucz.ca, using HTML, CSS, and Javascript to craft a modern user experience
- Wrote plugins for a popular Java-based game, one of which became popular and was downloaded over 1000 times by the community
- Created and setup a promotional website and e-mail newsletter system for a community-run series of open mic events at www.yropenmic.com

Engineering Orientation Leader — September 2014, 2015, & 2016

- Led, instructed, and supervised students, as well as participated in the setup and teardown of most events in an administrative role for over 7000 engineering first years (2016)
- Took responsibility for an entire group of over 80 students, with the help of only two other orientation leaders (2015)
- Organized and supervised incoming first-year students, ensuring they were safe, actively engaged, and having fun during orientation week activities

Interests

Professional: app creation, data analysis, electronic design, programming, prototyping, web design, woodworking
Personal: biking, cooking, photography, reading, running, snowboarding, travel

References

Available upon request.