Colton Begert | Resume

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Undergraduate Computing Science Student at the University of Alberta

Employment History

- **University of Alberta - Networks Lab** — **Edmonton, Canada**
  Research Assistant — *May 2016–Current*
  - I developed and deployed an embedded system for the AGE-WELL Smart Condo which is a multi-department research group.
  - Included work from designing circuits, working with digital sensors, embedded development on an NRF52, Bluetooth communication stack for transmitting data, Raspberry Pi's for data collection, Sql Database and MQTT for data transfer and managing a server to process the data.
  - Researched alternative ways to power low energy sensor nodes with methods such as solar and thermal energy harvesting.
  - Created a support package for a customer who purchased the technologies that I developed.
- **Richard McDonald & Associates** — **Edmonton, Canada**
  Summer Intern — *May 2015 - August 2015*
  - Summer internship to develop a reporting system to integrate with the company's Enterprise Resource Planning Software.
  - Done in VBA and was used to pull data and make reports for employee performance. We tracked metrics on quoting, sales and, customer satisfaction, which I integrated into a monthly report.
- **Wave Control Systems** — **Edmonton, Canada**
  Shop Assembly and Testing — *Summers 2009-2014*
  - Five summers at an engineering and fabrication company, working on several million dollar projects.
  - I worked with the engineers in the research and development department.
  - I assembled and tested oil sand skid packages with inspectors from multiple oil and gas companies.
  - I helped prepare project documentation and also managed and updated the phone system every summer.

Education

Academic Qualifications

- **University of Alberta** — **Edmonton, Canada**
  Computing Science Undergraduate, 2016-17 GPA 3.8 — *2013 – May 2018*

Academic Scholarships

- **Amdahl Academic Achievement Scholarship in Computing Science**
  By nomination from the Department of Computing Science, University of Alberta — *2017*
- **University of Alberta Jason Lang Scholarship**
  Awarded by GPA, University of Alberta — *2016, 2017*
- **Campbell Soup Company Scholarship**
  High School GPA — *2013*
- **Alexander Rutherford Scholarship**
  High School GPA — *2013*

Undergraduate Projects

- **CMPUT 401** *Software Engineering - Currently in progress*
  - Currently building a React Native cross platform app for a doctor in Hinton.
  - Simulates a vital monitor to aid in CPR and first response hospital drills.
- **CMPUT 466** *Machine Learning*
  - Developed a program to analyze stock prices and predict large changes in the market.
  - Created a data set using a real-time stock api and used multiple forms of regression and time series analysis on the data set.
  - Did not make me a millionaire as I had hoped.
- **CMPUT 301** *Development of an Android App for Ride Sharing*
  - Developed an app for ride sharing with agile methodology with weekly scrum meetings and iterative design.
  - Built to a set of requirements and user stories with well written documentation.
  - Used an Elastic Search back end and included many search and map api's to deliver an exceptional user experience.
- **Undergraduate Individual Study** *Wireless Sensor Networking*
  - Built a discrete time, event driven simulator to predict the frequency of sensor node interactions as they move through a simulated space.
  - Used OpenGL graphics to render the simulation in an event driven manner to inject draw events to separate the physics engine and rendering.
  - Used an embedded device (MSP 432) that I designed to get atmospheric weather conditions and wifi RSSI measurements to test range and signal strength in differing weather conditions.
  - Used a Raspberry Pi to collect and process the data, with a cloud server to post it live to the web.
- **CMPUT 397** *Information Retrieval*
  - Implemented a search engine that used inverted indexes and tf-idf and vector normalization to create a searchable movie review database.
  - Supported for boolean queries and had modes which implemented other searching algorithms such as BM25 and Binary Independence Models.

Technical Skills

- **Programming Languages:** Proficient in: C, Python, Sql, Embedded C platforms (NRF52), Arduino, React-Native, Javascript, Java, Android, VBA, SPARQL, GO, HTML, TEX
- **Software Skills:** Linux and Unix command line, Git, Scrum and Agile Development.
- **Other:** Soldering, breadboarding for rapid prototyping, Oscilloscope and debugging of simple circuits.

Interests and Extra-Curricular Activity

- **Hackathons**
  - Hacked Beta 2017: Won Best hardware hack for turning a midi controller into a chess board
  - Hacked 2018: Made an arduino based password manager with browser extension
- I am a member of the University of Alberta Triathlon Club where I train and compete for triathlons. It is a blend of my passions for running, biking and swimming.
- I assembled a 3D printer as a way to make custom hobby boxes for projects but have spent far too long on calibrating and printing cool things.
- Living close to the mountains has spawned a love for skiing.

References

- References available on request.