Tucker J. Polomik

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Education

- **University at Buffalo, School of Engineering** — Buffalo, NY
  Bachelor of Science in Computer Engineering — *Expected Sept. 1, 2018*

Personal Projects

- **InMoov Robotics Simulation**: Worked on a team of 6 to create a bipedal motion simulator for an open-source CAD tool called "Choreonoid". Wrote C++ code that models bipedal kinematics and Python scripts that automate animations. Followed the agile software development pattern with bi-weekly sprints.
- **Carduino (Autonomous RC vehicle)**: Write C code on an ATmega328P chip that controls servos and motors on an RC vehicle. Concurrently parse data from an ultrasonic sensor to calculate the vehicle's distance to things around it, changing the angle of the servos to avoid collisions accordingly.
- **I'm Hungry**: Full-stack developer for a Node.js Yelp clone. Integrated back-end and database MySQL functionality with AWS. Wrote registration, log-in, and session storing modules; regularly back-up database.
- **CppNews**: Used the Twitter open API with Python library Tweepy to make a data-scraping bot. Retweets things related to the C++ language if it's deemed popular by internal API data (number of likes relative to followers, follower engagement, etc).

Experience

- **KGB AVIATION SOLUTIONS, LLC.** — West Seneca, NY
  Capstone Project — *February 2018 - May 2018*
  - **FDR Interfacing Tool**: Worked with the company CEO and several other interns to build an interfacing system for flight data recorders (FDRs).
  - **Reverse Engineering**: Determined the proprietary handshaking protocol & signal timing patterns of FDRs. Converted RS-422 to 5V TTL using transceiver chips which is then fed into an FTDI chip with a baud buffer so that our system and the FDR can communicate over serial at different baud rates.
  - **Analog Tooling**: Used a Tek oscilloscope and Digilent bus analyzer to determine character encoding, start-stop, parity and baud rate of serial streams.
  - **Data Download**: Wrote a Python script which pulls data from the FDR and stores it to removable, non-volatile flash memory.
  - **Shipped Product**: Managed to take an idea from the planning stages and progress to a tangible, secure, shippable embedded system in four months time.
  - **Non-disclosure Agreement**: Currently binded by a NDA which prevents discussing this experience in verbose technical & financial detail.
- **WNY Food Web** — Buffalo, NY
  Volunteer Software Developer — *June 2017 - July 2017*
  - **Poverty Relief**: Wrote Typescript and SQL back-end modules for retrieving data from DB based on user-input. Worked directly with a team of engineers, business-people, and lawyers, all volunteers.
- **Hannaford Bros Supermarket** — Pine Bush, NY
  Customer Service Clerk — *March 2014 - September 2015*
  - **Customer Service**: Encouraged continued patronage in a small-town environment. Performed store maintenance. Worked in tandem with new hires to familiarize them with job duties.

Programming Skills

- **Languages**: Java, C++, C, JavaScript, Python, SQL, ARM7
- **Tools & IDEs**: Git, Eclipse, Visual Studio, LaTeX, make, JUnit, vim, MySQL, PostgreSQL
- **OS/Platforms**: Linux (Debian, armbian, Ubuntu, Fedora), Windows, Android