# Aiden Benner

1B Software Engineering | University of Waterloo

## **Experience**

## **GEO-SLOPE International**

Backend Developer Intern

July-August, 2014, 2015, 2016

- Developed a webservice to parse and store analytics XML data from tens of thousands of GeoStudio sessions daily using C# and SQL
- Created a utility using <u>C#</u> that uses license data to send customer email reminders, automating hours of manual work weekly
- Designed a database to efficiently store and query GeoStudio analytics
- Implemented a service to send internal alerts when scheduled tasks fail
- Developed a service using <u>C#</u> to automatically backup log and error files stored on the production servers over FTP

C#, SQL, TFS

#### **VEX Robotics Team 3388**

Lead Developer

2014-2016

- Designed realtime embedded system code using  $\underline{C}$  to control robot's sensors and actuators both autonomously and by remote
- Implemented and tuned several PID controllers in <u>C</u> to control actuators using sensor feedback from gyroscopes, encoders and potentiometers
- Developed signal processing code to improve accuracy of sensor data
- Diagnosed and resolved several critical bugs in high pressure situations
  C, Git

#### **FIRST Robotics Team 4334**

Lead Developer

2015-2016

- Collaborated to write embedded systems code to control a 120lb robot
- Implemented feedforward motion profiling in Java to control drivebase
- Lead programming workshops during the China Robotics Challenge
- · Maintained the team website using Jekyll and Markdown

Java, Git

### **Skills**

Proficient: C++, Java Familiar: C, C#, HTML, CSS Prior Experience: SQL, JS, Python

Tools: Git, Vim, Unix Shell, TFS

## Contact

github.com/aidenbenner abenner@uwaterloo.ca (587) 582-2114 abenner.me

## **Awards**

3rd in Junior Division 2016 and 2nd in Junior Division 2015 in the Alberta Collegiate Programming Competition

#### **VEX Team**

16 total awards, won 7 competitions 8th/6000 teams in 2016 Robot Skills Semifinal World Championship 2016

#### **FIRST Team**

Winner of China Robotics Challenge Semifinal World Championship 2016 Won 3 regionals and 5 awards

#### Education

University of Waterloo Candidate for Bachelor of Software Engineering 2016 - 2021 (expected)

# **Projects**

## **Neural Network for Printed Optical Character Recognition**

- A neural network and backpropagation implementation written in <u>Java</u> to classify images of printed text
- Uses OpenCV to segment and normalize images of printed text into individual characters

#### **Orbit Assistant**

- A portable personal assistant built for the TI Tiva and Orbit Boosterpack using C++
- Microcontroller communicates over serial with an event handling framework written in Python
- Features include reddit and email clients, with location dependent weather and time updates

#### **Matrix Utilities**

- A web based suite of matrix utilities written in Javascript
- Uses Gaussian Elimination to calculate matrix inverses or determinants and renders output with Latex

#### **Chat Server**

- A graphical centralized chat client and server written in <u>Java</u> that allows text chat over LAN or the internet
- Gives users the ability to set and change their username and for the admin to kick/ban users