William Ganucheau

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EDUCATION

Carnegie Mellon University

School of Computer Science
August 2014 - May 2018

GPA: 3.87, Dean's List Fall '14 & Spring '15

Selected courses:
Principles of Imperative Computation,
Introduction to Functional Programming,
Great Theoretical Ideas in Computer Science.
Introduction to Computer Systems*,
Parallel and Sequential Data Structures*

* Anticipated, Fall 2015

SKILLS

- C++
- Javascript
- Python
- git
- Mercurial
- Using Google

SIDE PROJECTS

neuralnet
Library for creating, training, and saving feed-forward neural networks.

genetic
Library optimizing arbitrary functions using genetic algorithms.

ugly
A "universal graphics library," ugly defines a protocol for a text stream interface. Using this interface, applications can pipe commands to ugly via stdin which will then get piped to a web-based viewer and rendered in real time with HTML5 canvas.

recycle
Python library for managing commonly-used boilerplate files like "empty" Latex documents or project tamplates.

EXPERIENCE

Autonomous Surface Vehicles, Ltd

Software Developer
May 2015 - August 2015

Designed and developed a protocol for incremental syncrhonization of data between multiple clients.
When I started at ASV, they were sychronizing clients by resending the entire dataset every time a client made a change. I enabled data to be synced incrementally, sending only the changes that a client made. This drastically increased the speed of synchronization while also reducing the overall bandwidth used.
Technologies Used: C++, QT library, Mercurial

CMU Robotics Institute

Software Developer
October 2014 - May 2015

Worked with a team to prototype an experimental lunar rover.
About three months after joining the team and becoming familiar with project, I took over as lead developer on the software team designing Tetramorph, a lunar rover that could fold up to fit inside a 30cm cube. I designed the overall software architechture as well as algorithms and protocols for communicating between the user interface and the robot.

Technologies Used: Python, OpenCV, ROS, git

C&C Technologies

Software Developer
May 2013 - August 2013, May 2014 - August 2014

Developed a simulator to enable the testing of navigation algorithms in autonomous marine vessels.
My simulator was physically accurate and allowed the simulation of arbitrarily configured vessels. In addition to simulating motion, my simulator also simulated signal noise and procedurally generated the seafloor terrain. My simulator drastically improved the efficiency of the software team by enabling them to test their software without taking a physical boat to a body of water.

Technologies Used: C++, QT library, Mercurial

ULL C.A.P.E. Lab

Software Developer
May 2012 - August 2012

Developed the groundstation software for a pico-satellite.
In addition to participating in weekly team meetings, meeting deadlines, and producing status reports, I worked with two others to implement algorithms accounting for packet-loss and data corruption to facilitate communication between Earth and the satellite. I also developed the user interface that would be used to monitor the satellite. My software was successfully used to monitor the satellite after its launch in November 2013.

Technologies Used: C#, Mercurial

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