DREW ALLYN GROSS

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TECHNICAL SKILLS

- **Mobile:** Experience developing iOS games, mobile game engines for iOS, and apps for Android.
- **Web:** Developed web apps using Python with Django and Javascript.
- **Desktop:** Created desktop applications for Windows using C# and .Net, and for Mac using Objective-C
- **Hardware:** Developed and analyzed circuits for a voltage, current, and temperature monitor. Developed low level software for embedded systems.
- **Languages:** C, C++, C#, Obj-C, Java, Python, Javascript, Perl, Assembly, Haskell

WORK EXPERIENCE

Touch Hardware Test and Instrumentation Intern **May 2013 – August 2013**
Apple **Cupertino, CA**

- Analyzed circuit board to locate the source of error in current measurement.
- Failure analysis and build support of touch module of iPhone 5s at Foxconn Guanlan factory.
- Developed test fixture control board firmware in C.

iOS Power Tools Intern **August 2012 – December 2012**
Apple **Cupertino, CA**

- Developed a log parser and data visualization and analysis tool to improve battery life of iOS devices.
- Mac desktop application written in Objective-C.
- Analyzed interaction between hardware and software components of iOS devices and how they affect power usage.

Mobile Game Developer **January 2010 - April 2010**
XMG Studio **Toronto, ON**

- Created the animation, input handling, and event handling of a game engine for iOS using C++ and Objective-C.
- Released an iPhone game, "Blade Battle", using the Cocoa framework, Chipmunk Physics library, and Cocos2D graphics library.
- Created a tile based level editor and physics engine using XML, "Tiled" map editor, and the Chipmunk Physics library.

Software Engineer Intern **September 2010 - December 2010**
Pason Systems Corp. **Calgary, AB**

- Developed automated GUI and performance testing scripts using Shell and Perl to measure the capacity and performance of Pason's Electronic Drilling Recorder (EDR).
- Conducted Quality Assurance (QA) testing to identify and reproduce specific issues, ultimately determining circumstances that caused each bug.
- Created a tool that parsed text files to find words that needed translation, reported them to the translator, and reinserted the translated words into the text file.

TECHNICAL PROJECTS

Distributed Computing Infrastructure

- Created a scalable, fault tolerant distributed computing infrastructure in Python.
- Developed a working prototype of the infrastructure in 2 days while learning Python.

Facebook Hackathon

- Competed in a team of 4 against 50 teams and won. We competed in the international championship at Facebook HQ in November 2011.
- Developed a C# desktop app similar in concept to Dropbox that uploads all photos from a folder to Facebook as they are added to the folder.

Robotics and Electronics

- Founded a FIRST robotics team at my high school.
- Developed a robot that won "Most Innovative Robot" and second place at the Idaho State FIRST Robotics Championship.
- Developed a robot on the Arduino platform involving serial communication and image processing to detect and react to physical surroundings.
- Designed circuitry to power lasers, microcontrollers, and servo motors.
- Used ROS (Robot Operating System) to simulate and program robots for a variety of tasks.

Velocity Residence for Entrepreneurs

- Member of the Velocity residence for entrepreneurs at the University of Waterloo for 3 years.

Google AI Contest

- Developed an AI from scratch in C++ that competed in the Google AI contest.
- Placed 683rd out of 4,619 competitors.

RBC Shad Entrepreneurship Cup

- Worked with a team of 30 self-organized high school students in 3 layers of management.
- As a team we created a viable business plan, marketing plan, website and product prototype.
- I constructed the prototype and lead the prototype development team.
- Awarded second best prototype, best marketing plan, second best website, and third best overall.

Game Development

- Created a JavaScript programming and logic puzzle game, "ropuzzle.com" during Perimeter Institute Hackathon, placed first.
- Created a physics based Flash video game similar to "Ball Revamped" using ActionScript 2.
- Created Half Life 2: Deathmatch mods in a level design workshop.
- Used wings 3D to create textured and UV mapped models.
- Disassembled and reverse engineered the popular free game "Cave Story" and modified it using x86 assembly to create new levels, weapons, and enemies.

RELEVANT COURSES

- **Autonomous Mobile Robots,** including Kalman Filter and variations, Particle Filter, robot modeling, path planning, localization, mapping.
- **Image Processing,** including image enhancement filters, image compression, and image segmentation.
- **Sensors and Instrumentation,** including circuit design, circuit theory, op-amps, and feedback.
- **Real Time Operating Systems,** including interrupt handling, real time processing, file systems, and concurrency.
- **Digital Control Theory,** including continuous and discrete design, discretization, lead-lag design, PID design, and linearization.

EDUCATION

Candidate for Bachelor of Applied Science, Mechatronics Engineering
University of Waterloo, Waterloo, ON.
Expected graduation: April 2014

OTHER INTERESTS

- Rock climbing, skiing, volleyball, woodworking, metalworking, 3D printing, board games.