

Alexander Broom

Objective

Recent university graduate interested in a software position where enthusiastic teams create and update various applications and services. Eager to learn and contribute in environments where challenges must be addressed with innovative and reliable solutions.

Education

Colorado School of Mines (Golden, CO) with President's Scholarship

Bachelor of Science in Computer Science

Graduated May 9, 2014 **CSCI GPA: 3.0**

Relevant Courses

Algorithms	Mobile Programming
Computer Graphics	Operating Systems
Computer Organization	Programming Languages
Computer Simulation	Software Engineering
Data Structures	User Interfaces
Discrete mathematics	Web Applications
Elements of Computing Systems	Web Programming
Core Courses for Mechanical Engineering	

Software Skills

Programming Languages: Java Ruby Python C++ C C# JavaScript Bash Flex Racket
Databases: MySQL SQLite3
Operating Systems: Linux Mac OS X Microsoft Windows
Other: HTML .NET Rails PHP CSS Twitter Bootstrap JSON XML Bison
Gimp Adobe Software LibreOffice Microsoft Office Sublime Text Solidworks

Internship Experience

Symplified - Boulder, CO - **Field Session Intern**

Wrote base code for a REST applications in Java, .NET, Ruby and PHP

Created basic GUIs in order for Symplified to demo the REST application to clients

As a field session intern, progress was evaluated by Colorado School of Mines and received an A

Rice University - Houston, TX - **Programming Intern**

Upgraded Java and C++ research software for analyzing computer performance profiles

Implemented file reading and writing with Google Protocol Buffers instead of XML

Reduced save files from over 1 GB to less than 100 MB

University of Texas MD Anderson Cancer Center - Houston, TX - **Pathology Intern**

Used Adobe Photoshop and Gimp to measure breast tumor volumes

Conducted simulations for breast tumor volume estimation

Assisted pathology researchers with microscope slide organizations

Publications

Edgerton ME, Chuang YL, Macklin P, Sanga S, Kim J, Tomaiuolo G, Yang W, **Broom AD**, Do KA, Cristini V. Using mathematical models to understand the time dependence of the growth of ductal carcinoma in situ. Abstract, 31st Annual San Antonio Breast Cancer Symposium (2009).

Highlighted Projects

Online Barter

Developed a web application in Ruby on Rails where people can create accounts and place items up for barter
Other users can then make trade offers with their own items before trade is accepted, modified, or rejected
Used Devise for authentication and Twitter Bootstrap for base styling and auto rescaling

Dota Dictionary

Developed a mobile Android app for quick updates on Dota 2 heroes
App connected to google doc which managed the list of available heroes
Heroes stored and then sorted through the phone's SQL database
Fragments were used to enable multiple layouts for various screens

Traffic Light Intersection

Developed a computer simulation in Python of a crosswalk intersection
Handled random arrivals of pedestrians and cars with acceleration, deceleration and collision
Determined when to change lights to allow for pedestrian or car travel

Board Game Scorekeeper (in development)

Developing a mobile Android app for easy scorekeeping of various board games

Dark Souls II Summoner (in development)

Developing a mobile Android app to assist cooperative gameplay in Dark Souls II

Review Website (in development)

Working with two others to create a website which we manage and provide content

Book (in development)

While not computer science related, I am writing a fantasy book, which is awesome!

Other Experience and Service

Designed Prototype satellite to measure high altitude albedo reflection from clouds for Lockheed Martin
Designed a heat recovery system for wood-burning ovens to lower use of gas powered water heating system
Volunteered at University of Texas MD Anderson Cancer Center during summers from 2006 until 2009
Students of Service - Raised money for breast cancer research and provided food for the hungry
Houston Food Bank - Assisted Hurricane victims
Supported diabetes research - produced and sold over 100 shirts

Enrichment Experience

1st Degree Black Belt in Kuk Sool Won (South Korean Martial Arts)
Member of Kuk Sool SWAT program (Students With Aptitude for Training)
Awarded for swimming competitions and actively practice tennis, badminton
Writes short stories and draws cartoons in spare time
Speak basic French and Vietnamese
Studying Piano since 2006 (Classical, Jazz, New Age, Pop)
Studied ceramics, drawing, computer design
Born and raised in Australia until 1999 (7 years) and regularly travel to Australia
Travelled to Japan with school to study Japanese culture and traditions
Travelled to Canada, Mexico, France, New Zealand, Bahamas, Puerto Rico, U.S. Virgin islands, Grand Turk
Tutored people ranging from children to university students