Russell Miller

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# Statement of Interests

I hope to be someone who can bridge the gap between biologists and computer scientists, knowing both what’s happening in a computer program and the biological concepts that are being analyzed. I want to create software that can be dynamically used by many biologists with ease without a need for personalization for a project.

# Modus Operandi

I started out as an Animal Biology major intending on becoming a veterinarian, but as time went on and as I took more computer science classes for fun, I realized that I loved programming as more than just a hobby. I kept both majors, intending on being able to combine the two unique subjects, doing bioinformatics.

# Skills

## Languages

* Experienced with: C++, C, Java, Git, BASH, UNIX
* Briefly worked with: Swift, Obj-C, Perl, SQL, MatLab, R
* Foreign: Japanese (somewhat)

# Education

‘12- University of California Davis (expected graduation Spring 2017)

* Computer Science and Animal Biology double major
* GPA: 3.5 CS major GPA: 3.9

‘08-12 Loyola High School in Los Angeles

## Relevant Coursework

* Data Structures
* Algorithm Design/Analysis
* Software Engineering
* Database Systems
* Operating Systems
* Bioinformatics
* Stat Analysis Thru Comp
* Genetics
* Systemic Physiology
* Intro to Evolution

# Projects

’15 DarkMaze – C++

* Creates a randomly generated 2D maze
* Competition to write a solver in C++ using the program’s movement interface functions

’14 Minesweeper – C++

* Creates a randomly generated puzzle
* Competition to program a solver in C++ using functions that mimic the usual mouse interface

’14 Nonogram – C++

* Created a nonogram puzzle generator, simple solver, and solution checker
* Input & output are text files, allowing solver implementation in any language

’11-12 DungeonAdventure – Java

* 2D grid based game w/ heroes, monsters, and equipment
* First large object oriented program, used graphics and user interfaces, like buttons, listeners, and windows

‘12 Tetris – Java

* Implemented showing next pieces, storing pieces, score, and bomb and oil special pieces
* Used object oriented programming and APCS case study library *Gridworld*

# Work Experience

’15- **Bioinformatics Intern** at UCD, Veterinary Genetics Lab, Mammalian Ecology and Conservation Unit

* Rewrote old BASH scripts/pipelines, increasing efficiency by up to 200%
* Helped complete new scripts, converting and analyzing genomic data

# Other Experience

## Davis Computer Science Club

’14-15 Club Officer – Pragmatic Programming Committee Chair

* Led Tutorials
  + GDB debugging – 3 Workshops – ~75 people
  + Git Workshop – ~15 people
* Led Competitions
  + Minesweeper – create program to solve as much as possible of puzzle
  + DarkMaze – create program to navigate a 2D maze

’13-15 Tutor

* Tutored for 3 CS courses a few hrs/week in spare time
* Helped lead review sessions for midterms and finals for audiences of 50+ students
* Helped CS Club committee tutors with how to best help people learn

## Before College

‘05-11 Boyscout, Troop 764

* Eagle Scout
* Leadership & Outdoor experience

‘11-12 Taught elementary school kids how to use an abacus

* 2nd~5th graders, 1 hr/week

# References

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