Lennart Rudolph github.com/lrudolph1 lrudolph@hmc.edu

Education

Harvey Mudd College, Claremont, CA
Bachelor of Science, Physics, Concentration in Physics with Computers, Expected May 2016

Experience and Projects

Software Engineering Intern BigNerve May 2015-Current
I work on the backend API for BigNerve's DailyNerve website which is primarily written in Google's `Go` programming language. I have been working on integrating PayPal Express Checkout with the existing codebase by writing my own RESTful implementation.

Assistant to Sys Admin HMC Engineering Department May 2015-Aug 2015
I assisted the engineering department's system administrator. I created new disk images for over sixty engineering department computers and I installed solid state drives into these machines. I occasionally assisted the college's Computer Information Services department with help-desk support tickets. Furthermore, I wrote and edited batch scripts to optimize tasks.

Wormhole Simulation HMC Physics Department Apr 2015-May 2015
As part of a computational methods in physics class, my two team members and I used concepts from general relativity to implement a ray-traced interpolation map for the light from a wormhole. This was implemented in `Mathematica`. (See my `GitHub` for the code and examples.)

Grader HMC Physics Department Jan 2014-May 2014
I graded homework for a section of Mechanics & Wave Motion (PHYS 024).

Research Student HMC Physics Department Jan 2014-May 2014
I assisted in the development of a `SolidWorks` model of a vacuum chamber for an ion trapping experiment. I worked with code for magnetic field simulations using `Radia` for `Mathematica`.

Tutor HMC Homework Hotline Sep 2012-May 2013
I tutored student callers in mathematics and science from the elementary school level to the AP level. I tutored AP Physics, AP Calculus BC, AP Statistics, and AP Chemistry.

Skills

Computer Skills and Coursework .....
Java, C++, Go, Python, Racket, Prolog, LaTeX, Git & Subversion, Mathematica, Maple, Matlab, IGOR Pro, SolidWorks, Csound.
Coursework: High Performance Computing[1], Data Structures and Program Development, Computability and Logic[1], Principles of Computer Science, Introduction to Computer Science

Physics Coursework .....
Computational Methods in Physics, General Relativity & Cosmology, Electromagnetic Fields[1], Quantum Mechanics, Theoretical Mechanics, Statistical Mechanics & Thermodynamics, Quantum Physics, Electromagnetic Theory and Optics, Mechanics & Wave Motion, Gravitation, Special Relativity, Fundamentals of Mechanics, and Research in Physics.

Mathematics Coursework .....
Fourier Series & Boundary Value Problems, Discrete Mathematics, Intermediate Probability, Differential Equations and Linear Algebra II, Multivariable Calculus, Probability and Statistics, Intro to Differential Equations, Intro to Linear Algebra, Calculus, and Putnam Seminar.

Languages, Labs, and Miscellaneous Coursework .....
English, German, and Spanish (in order of proficiency). Optics Lab, Electronics Lab, Modern Physics Lab, Physics Lab, Chemistry Lab, Intro to Engineering Systems, and Financial Economics

[1] In Progress