

Lennart Rudolph

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<https://lrudolph1.github.io/>

EDUCATION **Harvey Mudd College**, Claremont, CA
B.S. Physics
Concentration in Physics with Computers

Expected Graduation: May 2016

RELEVANT **Computer Science:** Algorithms (in progress), Data Structures and Program Development, High-Performance
COURSES Computing, Computability and Logic, Principles of Computer Science, Introduction to Computer Science
(CLICK FOR **Physics:** Computational Methods in Physics, Statistical Mechanics & Thermodynamics
COURSE **Mathematics:** Discrete Mathematics, Intermediate Probability, Differential Equations and Linear Algebra
DESCRIPTIONS) II, Fourier Series & Boundary Value Problems

SKILLS Proficient in: C++, Mathematica, L^AT_EX
Exposure to: Go, Java, Racket, C, Python, Prolog, GNU make, git, subversion, CUDA, MPI, OpenMP,
MATLAB, SolidWorks
Languages: English, German

PROJECT **Atomistic Simulations of White Dwarf Dynamics (LLNL)** **Sept. 2015 - May 2016**
EXPERIENCE - Member of a joint computer science-physics clinic team working on a white dwarf project for the Lawrence
Livermore National Laboratory's (LLNL) High Performance Computing Innovation Center
- Run molecular dynamics simulations on the Vulcan Blue Gene Q supercomputer using LLNL's dynamic
domain decomposition multi-physics particle dynamics code (ddcMD)
Wormhole Simulation (HMC) **Apr. 2015 - May 2015**
- Used concepts from general relativity to implement a ray-traced interpolation map for the light from a
wormhole in Mathematica (see my GitHub for the code and examples)

WORK **Software Engineering Intern (BigNerve)** **May 2015 - Dec. 2015**
EXPERIENCE - Worked on the backend API for BigNerve's DailyNerve website
- Integrated PayPal Express Checkout with the existing codebase by writing my own RESTful implementation
in Google's Go programming language
Assistant to System Administrator (HMC) **May 2015 - Aug. 2015**
- Created new disk images for over sixty engineering department computers and installed solid state drives
into these machines
- Occasionally assisted the college's Computer Information Services department with help-desk support tickets
- Wrote and edited batch scripts to optimize tasks

OTHER **Physics Research Student** **Jan. 2014 - May 2014**
EXPERIENCE - Developed a SolidWorks model of a vacuum chamber for an ion trapping experiment
- Worked with Radia for Mathematica to simulate magnetic fields in the chamber
Physics Grader (HMC) **Jan. 2014 - May 2014**
- Graded homework for a section of Mechanics & Wave Motion
Homework Hotline Tutor (HMC) **Sept. 2012 - May 2013**
- Tutored student callers in mathematics and science from the elementary school level to the AP level
- Tutored up to AP Physics, AP Calculus BC, AP Statistics, and AP Chemistry.

OTHER **Physics:** General Relativity & Cosmology, Electromagnetic Fields, Quantum Mechanics, Theoretical Me-
COURSES chanics, Quantum Physics, Electromagnetic Theory & Optics, Mechanics & Wave Motion, Gravitation, Spe-
(CLICK FOR cial Relativity, Optics Lab, Electronics Lab, Modern Physics Lab, Physics Lab
COURSE **Mathematics:** Multivariable Calculus, Probability and Statistics, Intro to Differential Equations, Intro to
DESCRIPTIONS) Linear Algebra, Calculus, Putnam Seminar.