

CONTACT INFORMATION	lrudolph (AT) hmc (DOT) edu	https://lennrt.github.io
EDUCATION	Georgia Institute of Technology , Atlanta, GA <i>M.S. Computer Science</i> (in progress) Harvey Mudd College , Claremont, CA <i>B.S. Physics</i> <ul style="list-style-type: none"> • Major Concentration in Physics with Computers • Senior Capstone: <i>Atomistic Simulations of White Dwarf Dynamics (LLNL)</i> 	Jan. 2017 - 2019 (expected) Sept. 2012 - May 2016
SKILLS	Most experience: Go, Python Some experience: NumPy, pandas, R, OpenCV, git, MySQL, L ^A T _E X, Google Cloud Datastore (NoSQL), Google App Engine, C++, C, Java, Mathematica, Docker, Linux, batch, bash Exposure to: Prolog, Racket/Scheme, subversion, GNU make, CUDA, MPI, OpenMP, MATLAB, SolidWorks, Kubernetes, Google Container Engine, JavaScript, HAPI FHIR	
PROJECT EXPERIENCE	Clinical Decision Support Application (CDC) • Developed a clinical decision support application for the Division of Unintentional Injury Prevention of the Centers for Disease Control and Prevention (CDC) to support healthcare providers with the diagnosis and management of mild traumatic brain injury in pediatric patients. Our team leveraged Fast Healthcare Interoperability Resources, an existing CDS API, and human-computer interaction principles. Atomistic Simulations of White Dwarf Dynamics (LLNL) • Worked on a white dwarf project for the Lawrence Livermore National Laboratory's (LLNL) High Performance Computing Innovation Center as a member of a joint computer science-physics clinic team • Ran 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)	Jan. 2018 - Apr. 2018 Sept. 2015 - May 2016 Apr. 2015 - May 2015 • Used Mathematica, concepts from general relativity, and an approach by Kip Thorne et al. to implement a ray-traced interpolation map for the light from a wormhole (see my GitHub for the code and examples)
WORK EXPERIENCE	API Developer (DailyNerve) • I write and maintain Golang code for BigNerve's DailyNerve back-end web API. I train new back-end team members and lead the development of new DailyNerve API features. API Developer Intern (DailyNerve) • Integrated PayPal Express Checkout and other features into DailyNerve's back-end web API Assistant to System Administrator (HMC)	May 2016 - present May 2015 - Dec. 2015 May 2015 - Aug. 2015 • Created new disk images for engineering department computers; performed hardware upgrades; assisted with help-desk support tickets; wrote batch scripts to optimize tasks; used and maintained 3-D printer
RELEVANT COURSEWORK	Computer Science: Artificial Intelligence for Robotics ¹ , Data & Visual Analytics (in progress) ¹ , Software Development Process ¹ , Human-Computer Interaction ¹ , Introduction to Health Informatics ¹ , Computational Photography ¹ , Algorithms, Data Structures and Program Development, High-Performance Computing, Computability and Logic, Compilers and Languages, Operating System Concepts, Software Engineering Mathematics: Discrete Mathematics, Intermediate Probability, Differential Equations & Linear Algebra II, Fourier Series & Boundary Value Problems, Single & Multivariable Calculus, and Probability & Statistics Physics: Computational Methods in Physics, Statistical Mechanics & Thermodynamics, General Relativity & Cosmology, Electromagnetic Fields, Quantum Mechanics, Theoretical Mechanics	
OTHER EXPERIENCE	Physics Research Student (HMC) • Used SolidWorks and Mathematica to model and simulate magnetic fields in a vacuum chamber Physics Grader (HMC) • Graded homework for a section of Mechanics & Wave Motion Homework Hotline Tutor (HMC) • Tutored student callers in mathematics and science from the elementary school level to the AP level	Jan. 2014 - May 2014 Jan. 2014 - May 2014 Sept. 2012 - May 2013

¹Denotes Graduate-Level Course