Lennart Rudolph

https://github.com/lennrt

Contact Information

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https://lennart.page

Education

Georgia Institute of Technology, Atlanta, GA — **Jan. 2017 - May 2019**
M.S. Computer Science

Harvey Mudd College, Claremont, CA — **Sept. 2012 - May 2016**
B.S. Physics

- Major Concentration in Physics with Computers
- Senior Capstone: *Atomistic Simulations of White Dwarf Dynamics (LLNL)*

Skills

Programming: Go, Python, SQL, R, Java, `C/C++`, LaTeX, Mathematica, Linux shell commands
Frameworks/Platforms/Tools: NumPy, Pandas, OpenCV[1], Scikit-learn[1], SciPy[1], git/svn, Docker, Kubernetes[1], HAPI FHIR[1], Elasticsearch, Google Cloud Platform (Cloud SQL, NoSQL Datastore, App Engine, Cron, Cloud Functions), Amazon Web Services (CodePipeline deployments, EC2, RDS, S3, Lambda)
Miscellaneous: Software Engineering/Testing/Documentation Practices, RESTful API Development, Back-End Web Services, Microservices, Containerization, Human-Computer Interaction Principles, Data Analysis and Visualization, Machine Learning, Software Team Leadership and Communication, Early-stage Start-ups

Project Experience

Clinical Decision Support Application (CDC) — **Jan. 2018 - Apr. 2018**

- Our team developed a clinical decision support app for the CDC to support healthcare providers with the diagnosis and management of mTBI in pediatric patients. We leveraged FHIR and an existing CDS API.

Atomistic Simulations of White Dwarf Dynamics (LLNL) — **Sept. 2015 - May 2016**

- 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) — **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

Back-End Developer (DailyNerve) — **May 2016 - present**

- I write and maintain Golang code, tests, and documentation for BigNerve's DailyNerve back-end web API. I train new back-end team members and lead the development of new API features. I rearchitected and reimplemented the entire API as a platform-agnostic, containerized, microservice-based system.

Back-End Developer Intern (DailyNerve) — **May 2015 - Aug. 2015**

- Integrated PayPal Express Checkout and other features into DailyNerve's back-end web API

Assistant to System Administrator (HMC) — **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

Physics Research Student & Physics Grader (HMC) — **Jan. 2014 - May 2014**

- Used SolidWorks and Mathematica to model and simulate magnetic fields in a vacuum chamber
- 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

Relevant Coursework

Computer Science: Machine Learning[2], Machine Learning for Trading[2], Data & Visual Analytics[2], Database Systems Concepts & Design[2], Knowledge-Based Artificial Intelligence[2], Artificial Intelligence for Robotics[2], Software Development Process[2], Human-Computer Interaction[2], Introduction to Health Informatics[2], Computational Photography[2], Algorithms, Data Structures and Program Development, High-Performance Computing, Computability & Logic, Compilers & 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

[1] Indicates Some Prior Exposure/Experience
[2] Denotes Graduate-Level Course