

Herbie Rand

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EXPERIENCE

Backend Software Engineer

Aug 2021—Present

Lutron Electronics, Philadelphia, PA

- Collaborated in team of 3 on major software initiatives for IoT devices used by millions of customers worldwide
- Overhauled demultiplexing on Go backend for a proprietary application messaging protocol built on TCP/IP
- Resolved time-sensitive issues on features such as Apple Homekit to unblock firmware releases to core products
- Architected an integration testing framework to be used by over 12 squadrons to test newly developed features
- Automated the tests using Jenkins CI Pipelines to save 1000 hours of manual regression testing and counting
- Eliminated manual database upgrades by writing Bash scripts and adding them to Jenkins CI Pipeline

Undergraduate Researcher

May 2020—Aug 2020

Swarthmore College, Swarthmore, PA

- Collaborated with two professors and one peer to build a model relational database management system in C++
- Engineered concurrent buffer-management and disk storage software layers; implemented heap file interface
- Model successfully used for computer science electives at Swarthmore College
- Docs: <https://www.cs.swarthmore.edu/~newhall/cs44/f20/swatdb/docs/index.html>

Student Systems Administrator

May 2019—May 2021

Swarthmore College, Swarthmore, PA

- Wrote a Python Library to generate grafana dashboards from zabbix system-monitoring statistics
- Generated dashboards of CPU load, memory usages, and system uptimes of over 150 lab machines for faculty use
- Automated upgrades and software installations for over 150 lab machines using Bash and Ansible
- Taught Swarthmore students how to execute linux commands and modify their data usage quotas
- Docs: <https://github.com/hbrand1005/grafapyAPI#grafapyapi>

EDUCATION

Swarthmore College

GPA 3.70

Bachelor of Arts, Major in Computer Science, Minor in Philosophy

May 2021

- Relevant Courses: Data Structures and Algorithms, Computer Systems, Software Engineering, Advanced Algorithms, Programming Languages, Networks, Machine Learning

PROJECTS

McSweeney | Go, Bash | <https://github.com/hbrand1005/mcsweeney>

- Built a CLI application that consumes Twitch and Google APIs to compile and publish videos to Youtube
- Learned to use FFmpeg to concatenate disparate video and audio streams to a consistent format
- Improved the project to support concurrent API requests and video encodings

Training-Notebook | Go, Bash, Python | <https://github.com/hbrand1005/training-notebook>

- Engineered a sever-backend exposing REST API for a simple training notebook application
- Created multiple implementations to learn/compare modern tooling, web-frameworks, architectures, and databases
- Frameworks/Libraries: Gin, Fiber, Gorilla/Mux, SQLite, Mongo, Godotenv, Go Validator, Go JWT

TECHNICAL SKILLS

Programming Languages

Go, Python, Bash, Groovy, C++ (Experienced); C, C#, OCaml, Java

Frameworks/Libraries

Gin, Gorilla/Mux, Fiber, Flask, Behave, Go-SQLite, MongoEngine

Continuous Integration Tools

Jenkins, Github Actions, Docker, JFrog Artifactory, Kubernetes

INTERESTS

Violin: Six time Swarthmore College Orchestra Concertmaster; MN All-State, NAfME violinist; avid chamber musician

Weightlifting: Qualified and competed in the 2020 University National Championships for Olympic Weightlifting