

# Herbie Rand

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## EDUCATION

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### 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

## EXPERIENCE

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### Backend Software Engineer

August 2021 – Present

*Lutron Electronics, Philadelphia, PA*

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

### Undergraduate Researcher

May 2020 - August 2020

*Swarthmore College, Swarthmore, PA*

- Collaborated with two professors and one peer to build a model relational database management system in C++
- Engineered fully concurrent buffer-management and disk storage software layers
- Model successfully used for advanced computer science classes 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>

## TECHNICAL SKILLS

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**Languages:** Fluent in Go and Python; Familiar with Bash and Groovy

**Frameworks:** Experienced with Go and Python frameworks such as Gin, Gorilla/Mux, Flask, and Behave

**CI Tools:** Experienced with Jenkins, Github Actions, Docker; Familiar with JFrog Artifactory and Kubernetes

## PROJECTS

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**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 branches to test alternative web-frameworks, software architectures, and databases
- Tools/Frameworks: Gin, Fiber, Gorilla/Mux, SQLite, Mongo, Godotenv, Go Validator, Go JWT

## INTERESTS

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**Violin:** Six time Swarthmore College Orchestra Concertmaster, avid chamber musician

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