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HERBIE RAND

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EXPERIENCE

Backend Software Engineer | Lutron Electronics   Philadelphia, PA | Aug 2021—Present
- Developed and maintained a Go server-backend responsible for handling user requests and controlling system lighting via a REST API.
- Rewrote the routing package to enable more robust requests for a proprietary TCP/IP messaging protocol, unlocking the development of new features.
- Resolved time-sensitive bugs on features such as Apple HomeKit, ensuring timely firmware releases to core products and maintaining customer satisfaction.
- Designed and implemented an integration testing framework used by over 40 developers to test new API endpoints, reducing manual testing efforts and improving software quality.
- Automated the tests using Jenkins CI Pipelines, saving thousands of hours of manual regression testing and enabling faster feedback on code changes.
- Eliminated manual database upgrades by writing Bash scripts and adding them to Jenkins CI Pipeline, reducing the risk of human error and streamlining the software release process.
- Parallelized test execution and eliminated setup redundancies, reducing build times by 50 percent and enabling more frequent software releases.

Undergraduate Research Fellow | Swarthmore College   Swarthmore, PA | May 2020—Aug 2020
- Collaborated with two professors and one peer to build SwatDB, a model relational database management system in C++
- Designed and implemented a memory layer with support for multiple replacement policies; implemented the clock-replacement algorithm
- Optimized project enabling concurrent access to buffer pool and disk storage, stress tested using pthreads
- SwatDB was successfully utilized for computer science electives at Swarthmore College

Student Systems Administrator | Swarthmore College   Swarthmore, PA | May 2019—May 2021
- Developed a Python Library for generating Grafana dashboards using Zabbix monitoring statistics
- Generated dashboards displaying CPU load, memory usage, and system uptimes for over 150 lab machines for faculty use
- Maintained documentation for the GrafapyAPI library on GitHub: github.com/hrand1005/grafapyAPI
- Automated software installations and updates on lab computers using Bash and Ansible
- Provided instruction to Swarthmore students on the UNIX shell for navigating the file system and modifying data usage quotas

EDUCATION

Swarthmore College   Swarthmore, PA | Sep 2017—May 2021
Bachelor of Arts in Computer Science, Philosophy   GPA: 3.70

TECHNICAL SKILLS

Programming Languages: Go, Python (Expert); Bash, Groovy, C++, C# (Familiar)
Libraries & Frameworks: Gin, Gorilla/Mux, Fiber, Flask, Behave, Go-SQLite, MongoEngine
Tools & Platforms: Jenkins, Github Actions, Docker, JFrog Artifactory, Kubernetes

PROJECTS

McSweeney | github.com/hrand1005/mcsweeney   *Go, Bash, SQLite*
- Created a CLI app that automates video compilation and publishing to YouTube using Twitch and Google APIs. Used FFmpeg for seamless video and audio synchronization and Go's concurrency mechanisms to parallelize video encodings for improved performance.

Training Notebook | github.com/hrand1005/training-notebook   *Go, Python, Bash, MongoDB*
- Built a versatile HTTP REST-API server for a training notebook app, using multiple web frameworks, databases, and tools. Gained experience with Gin, Fiber, Gorilla/Mux, SQLite, Mongo, Godotenv, Go Validator, and Go JWT. Developed expertise in REST-API development and technology selection.

INTERESTS

Violin: Swarthmore Orchestra Concertmaster; MN All-State, NAfME violinist; avid chamber musician
Weightlifting: Qualified & competed in 2020 University National Championships for Olympic Weightlifting