COPELAND ROYALL

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EXPERIENCE

VISA DevOps engineering intern   Summer 2022
- Worked on Hybrid Cloud team to create IaC (infrastructure as code) ensuring security for public cloud
- Implemented Terraform modules for AWS RDS Aurora and Elasticache Redis clusters
- Created Terraform development workflow for Windows-based DevOps engineers using WSL and Docker to run Unix Makefiles

Tangible AI Natural language processing intern   Summer 2021
- Researched and developed news ranking system for open-source Python chatbot (video report)
- scikit-learn TFIDF vectorizer and multi-output ridge regression model for positivity prediction
- Deploys with RSS-based news reading client and stochastic gradient descent classifier model for user-specific recommendations

SKILLS

Languages Python, Java, Go, Terraform, SQL, C
Software Linux (Ubuntu, RHEL), AWS, Kubernetes, Docker, VMware ESXi, WireGuard, Git

EDUCATION

University of Edinburgh   2019 – present
Computer science (BSc Hons)
GPA: 4.0

Dissertation
- Realtime multi-receiver aggregation system and GraphQL API for ADS-B aircraft tracking data
- Written in Go, utilizing Apache Kafka, MongoDB and GraphQL API
- Achieves 10ms end-to-end latency

Coursework
- Java drone routing algorithms: visibility graph, Dijkstra's and cost-limited travelling salesman problem
- Custom-made Arduino metal detector used on robot — team won Most Practical prize
- Other interesting classes: extreme computing (distributed systems, Scala, Hadoop); blockchain (Solidity); computer graphics; databases (relational calculus, algebra and SQL)

UCL Academy   2012-19
Grades: Math A*, Physics A*, Computer science A, ACT 34

PERSONAL PROJECTS

Microcontroller asynchronous server monitoring
- Status-monitoring MicroPython firmware for the ESP8266 Wi-Fi microcontroller utilizing cooperative multitasking (asyncio)
- Refactored dependencies to run asynchronously
- SMTP (email) status notifications for ICMP echo, HTTP and DNS server requests; custom webserver with per-service ASCII latency graphs; watchdog timer; dynamic CPU frequency scaling

Home server
- Ubuntu Server host running single-node Kubernetes with K3s, cert-manager for HTTPS domain (copey.dev) and NGINX Ingress Controller
- Previously RHEL/CentOS guests using Podman on a VMware ESXi host

Aircraft tracking for Siri
- Created Go HTTP service to enable Siri to answer "What aircraft is that?" through Siri Shortcuts
- Uses GitHub Actions CI/CD for multi-arch ARM and x86 Docker image build; over 18,000 downloads

INTERESTS

Linux, aviation (ADS-B receiver), mountain biking, bouldering, VR. From age 12 built and flew drones