COPELAND ROYALL

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SKILLS

Languages TypeScript, Go, Python
Software GCP, AWS, Docker, Kubernetes, Linux, Terraform Pulumi, Node.js, Git

EXPERIENCE

Visa September 2023 – May 2024
Graduate Software Engineer
Developed TypeScript infrastructure as code for multi-product Google Cloud rollout in Europe, automating deployments and establishing development practices.

- Implemented TypeScript Pulumi IaC package to repeatably deploy 256 Pulumi resources across 4 Google Cloud (GCP) projects, meeting Payment Card Industry compliance, reducing deployment time and automating manual steps; also wrote packages for managing GKE, IAM and KMS resources
- Developed Pulumi packages with unit testing using Mocha and Chai and created multi-language SDKs enabling package use in TypeScript, Go and Python projects depending on requirements
- Deployed Cloudability granular FinOps monitoring in 45 GCP projects, recommending 10% cost savings
- Installed and updated Kubernetes cluster addons using Argo CD, Kustomize and Helm
- Migrated Concourse CI pipelines to new load-test platform

Visa Summer 2022
DevOps Engineering Intern
Accelerated adoption of AWS by developing foundational Terraform packages and development processes.

- Developed Terraform modules for AWS Aurora and ElastiCache Redis for standardized multi-team use
- Created Terraform Enterprise and tfsec development workflow for Windows using WSL and Docker

Tangible AI Summer 2021
Natural Language Processing Intern
Contributed Python ML-driven positivity-ranking news reader feature to open-source chatbot.

- Generated training data using Facebook and web scrapers for news article text and post reactions
- Trained TFIDF vectorizer and multi-output ridge regression model for positivity prediction, achieving a statistically significant R^2 (model fit) score of 0.61
- Implemented adaptive linear classifier for personalized recommendations

EDUCATION

University of Edinburgh 2019 – 2023
BSc Computer Science, First-class honors (GPA: 4.0)
Dissertation:

- Scalable multi-receiver ADS-B aircraft tracking data aggregation system
- Written in Go, utilizing Apache Kafka, MongoDB and GraphQL
- Achieved 10ms end-to-end latency

UCL Academy 2012-19
Grades: ACT 34, Math A⋆, Physics A⋆, Computer Science A

PERSONAL PROJECTS

Microcontroller Server Monitoring (github.com)

- Developed MicroPython firmware utilizing cooperative multitasking (asyncio) and refactored dependencies for simultaneous server health checks
- Implemented watchdog timer for fault tolerance; dynamic CPU frequency scaling for lower power consumption; email status notifications for ICMP, HTTP and DNS checks; web UI with latency graphs

Aircraft Tracking for Siri (github.com)

- Implemented Go HTTP service to empower Siri to describe nearest aircraft using ADS-B tracking data
- Used GitHub Actions CI/CD for multi-arch ARM and x86 Docker image build; over 18,500 pulls

INTERESTS

Long distance bike touring, mountain biking, camping, aviation, guitar