

Eli Richmond

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EDUCATION

Northeastern University, Boston, MA
Khoury College of Computer and Information Science
Bachelor of Science in Computer Science, A.I. Concentration

April 2024

TECHNICAL KNOWLEDGE

Languages: Python | Java | C | C++ | C# | SQL | JavaScript | Terraform | HTML | CSS
Tools/Frameworks: AWS | MongoDB | Azure | Git | React JS | .NET Apps | Django | NGINX

PROFESSIONAL EXPERIENCE

IptiQ Americas, Boston, MA | Software Engineering Intern July 2021 – April 2022

- Integrated a new component to the Java Spring backend for dynamically selecting environment-specific system configurations, enhancing flexibility across Microservices
- Architected a database schema and infrastructure to support partner-specific configurations, integrating with Azure pipelines to automatically apply updates based on each partner's setup
- Developed a REST API enabling communication between apps, enforcing data exchange rules based on partner-specific configurations
- Introduced Redis session caching for .NET applications, optimizing performance and scalability
- Strengthened Microservice architecture security

Phase Genomics, Seattle, WA | Software Engineer (part time) July 2017 – May 2024

- Developed AI-based classification infrastructure to assess genomic and metagenomic sample sufficiency, improving sample classification accuracy
- Designed and implemented a Python-based alignment parallelization pipeline, leveraging AWS Step Functions and Batch Jobs to run hundreds of sub-alignments in parallel, followed by re-merging results. Achieved a 10x improvement in sample alignment times
- Led development of a secure, customer-facing SFTP server for data upload/download, writing Python-based Lambda functions to generate and automatically remove customer credentials and limit access to specific directories
- Spearheaded the Bioinformatics team's transition to Terraform for managing infrastructure, standardizing deployments and improving scalability.

Phase Genomics, Seattle, WA | Software Engineer May 2024 – Current

- Contributed to the development of a Django-based web application for a genomic cytogenetics platform, building frontend and backend features like tracking sample progress through processing using Django, HTML, CSS, Python, and Terraform
- Led development of a downtime service using NGINX reverse proxy, with Python-based AWS Lambda functions managing the redirection of users during maintenance. Built additional Lambdas to automate customer alerts, handle dynamic routing, and trigger infrastructure updates through Terraform
- Developed a system to toggle the Python API service on/off during maintenance windows, integrating Lambda functions for caching messages, ensuring no customer requests lost

PERSONAL PROJECTS

- Made a polygon-based procedural map generator using C# in Unity
- Designed and coded a map-based strategy game where the opponents used graph search reasoning like Monte-Carlo Tree Search to showcase machine decision making
- Created a Reinforcement Learning based Unreal Engine project in C++ where a racing car would dynamically learn how to go faster around a track

References available upon request. Github: elirwater