DAVID PEREZ

david.a.perez.18@gmail.com | (253) 324-9746 | github.com/daperez18

EDUCATION:

UNIVERSITY OF WASHINGTON Sept. 2015 – June 2020
Bachelor of Science: Computer Science and Systems, Cumulative GPA**:** 3.62 Tacoma, WA

WORK EXPERIENCE:

UNIVERSITY OF WASHINGTON Sept. 2019 – June 2020
Undergraduate Research Assistant, National Institutes of Health, Sponsored Research Tacoma, WA
Project Title: Intelligent deployment of containerized bioinformatics workflows on the cloud

- Collaborated in teams to perform research experiments on performance and cost analysis of containerized genomics computational workflows utilizing EC2 instances and AWS Lambda FaaS Functions
- Developed and maintained benchmarking scripts to record and process performance data
- Developed techniques to infer public cloud resource contention from profiling data to aid training performance models
- Developed extensible scripts to visualize resource requirements (e.g. CPU, memory, disk, network) of containerized tasks
- Programming language case study for serverless data processing pipeline: created AWS Lambda serverless Java ETL pipeline for comparison with equivalent versions in Golang, Python, and Node.js

SKILLS:

- **Languages:** Java, JavaScript, Python, SQL, C, C#, R, HTML/CSS, Bash, Erlang, Prolog
- **Databases:** Azure SQL Database, MS SQL Server, PostgreSQL, MySQL
- **Tools/Services:** Docker, AWS (Lambda, EC2, S3, RDS, CloudWatch), Lambda, REST, VirtualBox, JUnit, Android Studio, Linux/Ubuntu, Git, Jupyter Notebook, IDEs (Eclipse, Visual Studio Code), Heroku
- **Knowledge:** Agile, Extract Transform Load, Virtualization, Unit Testing

PROJECTS:

MOBILE APPLICATION STOCK SIMULATOR Apr. 2019 - June 2019

- Created Android application through Android Studio enabling users to manage a simulated stock portfolio
- Implemented backend Heroku cloud database for data persistence of stock transactions
- Implemented local PostgreSQL database cache to support read only capabilities without WiFi
- Client application development to acquire and maintain real-time stock data from external stock APIs

TURN BASED CARD GAME FEATURING A.I. Dec. 2018 - Mar. 2019

- Developed front-end GUI using JavaScript
- Implemented random generation algorithms for monster loot and map to increase game variation

AUCTION APPLICATION Apr. 2018 - June 2018

- Developed application to simulate auction system that manages postings and bids
- Implemented a database to catalog biddable items and store user bid data

AWARDS:

QUARTERLY DEAN'S LIST Sept. 2015 - June 2020

- Recognized Eight Times for a quarterly GPA of 3.5 or higher

UPSILON PI EPSILON Nov. 2017

- Recognized for Academic Excellence

PUBLICATIONS

Perez, D., Hung, L.H., Xu, S., Yeung, K.Y., Lloyd, W., An Investigation on Public Cloud Performance Variation for an RNA Sequencing Workflow, In Proceedings of the 2020 ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB ParBio 2020), September 2020.

Perez, D., Hung, L.H., Xu, S., Yeung, K.Y., Lloyd, W., Characterizing Performance Variation of Genomic Data Analysis Workflows on the Public Cloud, 2020 6th IEEE International Conference on Cloud and Big Data Computing (CBDCOM 2020), Aug 17-24, 2020.

Cordingly, R., Yu, H., Hoang, V., Perez, D., Foster, D., Sadeghi, Z., Hatchett, R., Lloyd, W., Implications of Programming Language Selection for Serverless Data Processing Pipelines, 2020 6th IEEE International Conference on Cloud and Big Data Computing (CBDCOM 2020), Aug 17-24, 2020.

Deng, H., Hung, L.H., Schooley, R., Perez, D., Arumilli, N., Yeung, K.Y., Lloyd, W., Profiling Resource Utilization of Bioinformatics Workflows. arXiv preprint arXiv:2005.11491, May 2020.