Lance Bergeron

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Experience

Amazon   **June 2022 - March 2023**

Software Development Engineer   Seattle, WA

- Worked on a team that modeled the Amazon Transportation Network as a graph
  - This model was optimized using shortest path algorithms in order to recommend changes to the network based on time, network capacity, and cost restrictions
- Created an integration test verification stage on the team's CI/CD pipeline
- Profiled the model's performance and caused a 15% decrease in runtime
- Developed a command-line tool which creates small network graphs to efficiently test the model
- Created a data pipeline to retrieve information on package and warehouse types
  - Implemented a package routing restriction based on those types
- Used various AWS services, including EC2, S3, Lambda, SQS, Dynamo DB, and Cloudwatch

Education

Virginia Tech   **Aug 2019 - May 2022**

Bachelor of Science in Computational Modeling and Data Analytics   3.65 GPA
Minor in Computer Science, Minor in Math

- Graduated Magna Cum Laude

Skills

Languages   Java, Python, C, C++, Bash, Matlab
Technologies   AWS, Git, SQL, JUnit, CUDA, openMP, Unix, PyTorch

- Parallel programming in Java, C, and with CUDA
- Unit testing, integration testing, test-driven development
- Object-oriented programming and design patterns
- Machine learning algorithms including: linear, logistic, and penalized regression, time series, bootstrapping and cross validation
- Convolutional, fully-connected, and recurrent neural network structures

Projects

CUDA Newton Fractals link   **Nov 2021 - Jan 2022**

- Used CUDA and C++ code to asynchronously perform the convergence of Newton's iteration to find the roots of a randomly-generated polynomial
- Implemented a parallel hash algorithm to find the unique roots of that polynomial
- Created a command-line tool that outputs Newton fractals by coloring points on the complex plane based on which root they converged to