Jacob Glenny

713-817-7717 | jacobglenny@gmail.com

Education

The University of Texas at Dallas Aug. 2018 – May 2021
B.S. in Computer Science, ***GPA 4.0*** *Richardson, TX*

The University of Texas at Dallas Aug. 2020 – May 2022
M.S. in Computer Science, ***GPA 3.97****, Fast Track, Data Science Track* *Richardson, TX*

Experience

Undergraduate Research Assistant December 2019 – May 2020
The University of Texas at Dallas

- Implemented software engineering design patterns in a computational biology setting.
- Optimized and profiled existing C++ statistical machine learning code;
  Methods: Markov Chain Monte Carlo, Boltzmann Machine, Stack Sampling.
- Interfaced with a High Performance Computing Cluster (OpenHPC) using bash scripts.

Projects

Big Data Twitter Sentiment Streaming | *PySpark, Kafka, Elastic/ELK Stack* 2021

- Applied NLP principals to perform sentiment analysis in PySpark on transportation tweets.
- Integrated a powerful, realistic stack of Big Data technologies including Kafka as an event handler.
- Created a live Kibana Lens dashboard to summarize the inference results.

Flickr30k Image Captioning | *PySpark* 2021

- Researched state-of-the-art machine learning models for both image and language tasks.
- Designed a Deep Neural Network architecture which combines Google's EfficiencyNet CNN
  for image features and a custom RNN/LSTM for language features of a large dataset.
- Collaborate on a group project using Databricks' platform and AWS compute resources.

Mock Uber Database | *SQL, PL/SQL, Oracle Cloud* 2020

- Simulate an Autonomous Transaction Processing (ATP) database for the Uber app.
- Ensured Third Normal Form (3NF) of the relational database by designing from ER principals.
- Wrote Procdeures and Triggers in PL/SQL for functionality, e.g. ratings and payment.
- Created an interactive Oracle APEX data display for passengers, drivers, and admins.

Full Stack Web Application | *React.js, Bootstrap* | *Node.js, Express.js, MySQL* 2021

- Created a REST API by applying JavasScript frameworks. Emphasis on back-end.
- Facilitated tool rental/purchase and 3D-printing commissions for a fabrication shop.
- Acted as the group spokesperson for requirements engineering and Agile briefings.

Machine Learning | *Python, MATLAB, LaTeX* 2020-2022

- Wrote beautiful mathematical documentation within Google Colab notebooks.
- Used libraries such as *numpy, scipy, CVXPY, matplotlib* to solve optimization problems.
- Studied optimization theory and how it applies to Machine Learning:
  Linear/Quadratic/Semidefinite Programming, Lagrangian Duality, Information Theory.

Secure Chat Service | *C++* 2019-2021

- Developed a UNIX chat and file-sharing app with multi-threading and socket programming.
- Designed network protocols based on TCP and SFTP using only OpenSSL and SHA-256.
- Featured a publisher/subscriber design pattern to list friends' online statuses.

Technical Skills

Languages: Python, Java, C/C++, R, SQL, PL/SQL, JavaScript, HTML/CSS
Developer Tools: Git, Visual Studio Code, Google Colaboratory, LaTeX