

JIAQI(JAMES) LIU

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<https://szwalker.github.io/jiaqi>

EDUCATION

University of Pennsylvania

MSE in Computer Information Science

August 2020 - Present

Philadelphia, PA, USA

New York University

B.A. in Computer Science, GPA: 3.89/4

January 2017 - May 2020

New York, NY, USA

PROJECTS

Biazza Full Stack Web Application [[GitHub Repository](#)] [[Deployed Website](#)] May 2020

- Technology: Node, React, Express, Mongoose, JWT Auth with Passport, NodeMailer, Travis CI, Docker
- Followed an agile workflow that contains routine sprint planning, daily scrum, and demo for stakeholders.
- Applied test-driven development when implementing features to ensure the quality of the product.
- Integrated with continuous integration and continuous deployment to ensure fast delivery of new features.
- Implemented security measurements to prevent XSS and CSRF attacks.

GTSRB Image Classification Competition [[GitHub Repository](#)] May 2020

- Technology: Python, PyTorch, NumPy, Pillow, Matplotlib
- Researched the top-ranking paper on the benchmark and implemented a CNN classifier layer by layer (without using pre-trained models) following the architecture proposed in the paper.
- Performed data pre-processing to reduce noise and splitted the data into training and validation set.
- Experimented with different sets of optimizers and hyperparameters to fine-tune the model performance.

Parallelized Solver for Traveling Salesman Problem [[GitHub Repository](#)] November 2019

- Technology: C, OpenMP for multi-thread programming
- Redesigned the classic DFS algorithm by first identifying the sequential and parallelizable parts.
- Pruned the state space to be searched with carefully designed critical section updates.
- Achieved a speed-up of 1.5 compared to its sequential version for small problem size (size of 12) and is expected to have even higher speed-up with much larger problem sizes.

NYC SafeGo Data Analytics Project [[GitHub Repository](#)] [[Report](#)] December 2019

- Technology: Spark, HDFS
- Extracted, profiled, transformed, and ingested big data into HDFS.
- Studied analytic research papers relevant to the subject and data at hand to facilitate feature selection.
- Performed data analytics using SparkSQL and MLlib to extract actionable business insights.

Go Four It iOS Application [[GitHub Repository](#)] [[Demo Video](#)] April 2019

- Technology: Swift, ARKit, SceneKit, MultipeerConnectivity
- Designed an innovative way to transform Connect Four (a chess game) to an AR game on iOS devices.
- Supported multi-device mode through peer-to-peer connections such as Bluetooth and WiFi.

TECHNICAL SKILLS

Languages	Python, Java, C/C++, C#, SQL
Web Application	Express.js, React.js, ASP.NET, Flask
Machine Learning	Pytorch, NumPy
Data Analytics	Hadoop, Spark, HDFS, MongoDB, MySQL
Mobile Application	Objective-C, Swift