Chien-Cheng Aaron Lai

(786)817-7745 | aaronlai1027@gmail.com | linkedin.com/in/aaronchienchenglai | github.com/aaronlai1027 (willing to relocate)

EDUCATION

Georgia Institute of Technology, GA — **Expected Aug 2022**
Master of Computer Science — GPA: 4.00/4.00

Rice University, TX — **Graduated Dec 2018**
Master of Chemical and Biomolecular Engineering — GPA: 3.46/4.00

National Cheng Kung University, Taiwan — **Graduated Jun 2015**
Bachelor of Chemical Engineering

SKILLS

Programming & Tools	Python, C/C++, Java, SQL, JSON, R, MATLAB, HTML5, Git, Docker
Data Analytics & Visualization	Python (pandas, NumPy, SciPy, seaborn, matplotlib), R (tidyverse, dplyr, ggplot2)

PROJECTS

Department of Computer Science, Georgia Institute of Technology

Multi-Threaded gRPC and Distributed File Systems (DFS) — **May 2021 - Jul 2021**
- Designed and implemented a distributed file system using C++ gRPC and Protocol Buffer.
- Implemented multiple threads to manage gRPC asynchronous callbacks and requests.
- Implemented read/write mutexes to handled asynchronous operations in both a server and clients.

Shared Memory-Based Inter-Process Communication (IPC) — **May 2021 - Jul 2021**
- Implemented a cache server to communicate with a proxy server by POSIX share memory API.
- Utilized semaphores for file transfer and message queues for server communication.

Sales Report System Web Service — **Jan 2021 - May 2021**
- Designed the database schema by the EER-Relational Mapping.
- Developed full-stack web application to visualize analytical reports using python Flask, MySQL, and bootstrap.

Department of Computer Science, National Taiwan University

PM2.5 Prediction and Income Prediction — **Sep 2020 - Nov 2020**
- Handcrafted linear regression using gradient descent to predict future PM2.5.
- Handcrafted logistic regression using gradient descent to predict whether a person makes over 50K a year.

Department of Computer Science, Rice University

Computer Vision — **Jan 2018 - May 2018**
- Built SIFT and SURF detecting features algorithm to matching visual objects for image transformation and deformation.
- Implemented Bag of Features algorithm to classify 292 images into 20 groups with 70% accuracy.

Department of Chemical Engineering, National Cheng Kung University

Undergraduate Research — **Jul 2014 - Jun 2015**
- Utilized molecular dynamics simulations in Linux to investigate the properties of biomimetic bilayers.
- Implemented Gromacs to simulated bilayers using ion pair amphiphiles (IPAs).

WORK EXPERIENCE

Formosa Plastics Corp., Testengeer, Inc.
Chemical Engineer — **Mar 2019 - Present**
- Visualized data and improved analytical model in Total Quality Management Systems database.
- Developed data mining and pre-processing APIs for instrument testing data from XRD, FIIR, DSC, HPLC.

Applied Optoelectronics, Inc.
Manufacturing Process Summer Intern — **Jun 2018 – Aug 2018**
- Developed functions to track testing data through Manufacturing Execution System on Microsoft SQL Server.
- Analyzed testing results of failure devices and overdue work orders using Transact-SQL.