Jinchen Ma

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Education

- **Georgia Institute of Technology, Atlanta, GA** Aug 2018 - May 2021

BS in Computer Science (Intelligence & Information Internetwork) -- **Highest Honor** **Major GPA 4.00/4.00; GPA 3.97/4.00**

Experience

Amazon -- *Software Development Engineer Intern (Amazon Last Mile Team)* May 2020 - Aug 2020

- Designed and implemented an automated metadata system for all **56791** internal software services within Amazon.
- Learned and Built from scratch with AWS Data Pipeline, Redshift, AuroraDB, S3, Andes, Redash, and SQL. Explored and attempted AWS CDK, CloudFormation, Lambda, and Abacus API. Monitored with Couldwatch, Carnaval, and SNS.
- Run time improved from **300 minutes** (Beta) to **50 seconds** (Production) with better accuracy than any existing applications.
- Expanded the project scope from Last Mile Team (per requirement) to **all teams within Amazon** (extra feature).
- Came up with an extra project to upgrade team's service monitoring system to cover all stages of all team-owned services.

Tiangong Technologies Corporation -- *Software Engineer Intern* May 2019 - Aug 2019

- Designed and developed a **style-transfer** system that renders photos to oil-paintings using **RGB Gradient Image** and **CNN**
- Implemented interfaces between Json and arscript then rendered output painting with Arscript5.
- Further optimized with **evolutionary algorithm** to create more aesthetic paintings with **36%** better fitness values.
- Displayed project in local museums. Output painting can hardly be distinguished among man-made paintings.

Georgia Tech Solar Racing -- *Software Engineer* Aug 2018 - Present

- Independently developed **GUI** that shows real-time, visualized data from the solar car.
- Developed maximum power point tracer Firmware on Tiva micro-processor with C, optimized charging efficiency by **60%** using Incremental Conductance and Perturb & Observe algorithms, and prepared car for **American Solar Challenge 2020**.

Projects

Intelligent Pacman (A.I.) -- *Python* Sep 2019 - Oct 2019

- Built searching AI based on BFS, DFS, A*, and UCS to help Pacman wins 100% with **admissible and consistent heuristics.**
- Optimized with **Markov Decision Process** and **Reinforcement Learning** when facing action & sensor stochastic worlds.

Autonomous Driving Robot -- *Python* April 2020

- Implemented lane detection algorithms and used it to compute robot orientation on the road.
- Implemented the ICP algorithm and used it to perform simultaneous localization & mapping (SLAM) on Lidar scans.
- Robot is able to derived real-time environment mapping and drive autonomously.

Cars and Pens identifier (Neural Network) -- *Python* Nov 2019

- Implemented grad descent with restarts to achieve global min and varied hidden-layers & perceptrons to identify cars and pens
- Max accuracy at **98.5%** with standard deviation of 0.00678.

Food Truck Database Management System -- *MySQL* Feb 2020 - April 2020

- Created relational DB with MySQL to manage food trucks on campus, built front & back-end with NodeJS and CSS.

Language Recognition -- *Java* Sep 2018

- Applied **Markov Chain** to identify any input language along with percentage confidence.
- Accuracy rate higher than **90%** on all literature found in daily life and will be used to build **auto-translator.**

Amazon Alexa Skill: Taco Quiz -- *Python (Team Project)* Oct 2019

- Lead a team of 5, designed and built with **Alexa API** and Amazon **DynamoDB**.
- Corrects user's pronunciation. Published to Alexa skill store and adopted by School's Spanish professor.

Android Strategy Game "Space Trader" -- *Java (Team Project)* Jan 2019 - April 2019

- Designed and developed an Android MVVM application and provide persistence using Gson/serialization techniques.
- Acted as the SCRUM Master of the team and the game has been played by **68** players.

Leadership

Basketball Varsity -- Captain Aug 2016 - Jun 2017

Skills

Languages: **Java, Python**, **C**, **SQL**(MySQL, PostgreSQL), JavaFX, JavaScript, HTML, CSS, R, Assembly

Tools/Frameworks: AWS, Docker, Unix/Linux, Jupyter, Android, NodeJS, ReactJS, JQuery

Concepts: OODesign, Agile Development**,** Database, Data pipeline, Web Development, Genetic Algorithm, Machine Learning, Markov Decision Process, Computer Vision, Autonomous Driving Algorithms, Unit Testing