Alvin Hou

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Education

Stanford University — Stanford, CA
M.S. in Computer Science | Artificial Intelligence track — *Sep 2019 - Expected Jun 2021*

GPA: 4.0/4.0 **Awards**: Citadel Terminal AI Coding Competition Cal vs Stanford 2020 2nd place

Coursework: Machine Learning, Natural Language Processing, Principles of Data-Intensive Systems, Mining Massive Data Sets, A.I.: Principles and Techniques, Modern Algorithmic Toolbox, Parallel Computing, Introduction to Computer Networking

National Taiwan University — Taipei, Taiwan
B.B.A. in Information Management — *Sep 2014 - Jun 2018*

Rank: 1/39 **GPA**: Overall 3.95/4.3; Major 4.05/4.3

Honors: NTU Presidential Award, Phi Tau Phi Honor Society, Get Fresh System Development Contest National Championship

Teaching/Leadership: Teaching assistant of Calculus, Head of the NTU IM Summer Camp teaching team

Work Experience

Apple — Cupertino, CA
Software Engineer (Machine Learning) Intern | PySpark · Tableau — *June 2020 - Present*

- Designed and built a **new scalable machine learning pipeline**; implemented anomaly detection algorithms with **PySpark** which achieved **1500%** runtime performance boost compared to previous works (151 → 10 minutes for 155 million of data)
- Run dimensionality reduction and unsupervised clustering algorithms with **SparkML** and **Scikit-Learn** to provide data insights
- Built **Tableau Dashboards** for visualizing large-scale ML analysis reports to support ~100 engineers in building new products

ASUS Intelligent Cloud Services — Taipei, Taiwan
Software Engineer (Machine Learning) Intern | NLP · Azure · DevOps — *May 2019 - Jul 2019*

- Implemented Multi-Task Learning BERT models for natural language understanding with **Pytorch**; fine tuned the models on 100k+ training data and achieved **92.8 F1 score** with 22 class on 15,000 testing data
- Improved ASUS parser's accuracy by 15% and deployed to **Azure Kubernetes Service** as RESTful API services using **Docker**
- Built a data annotation tool for displaying incorrect parsing result; constructed an **autonomous CI/CD workflow** for a team of 10 Machine Learning and Linguistic engineers (**Azure Pipeline, Docker, Python, Java**)

IBM — Taipei, Taiwan
Software Engineer Intern | Fullstack · IBM Watson — *Jul 2017 - Jun 2018*

- **Fullstack developer** of IBM Impact Grants program, developed and redesigned the NGO Teach For Taiwan's website with HTML/CSS, **JavaScript** and **Php** in production
- Reduced the NGO's operating cost by 2/3 through integrating **Salesforce Sales Cloud** into its donation and membership system
- Collaborated with designers to improve online banking UX for 6 banks; utilized **IBM Watson** for customer service chatbot

Industrial Technology Research Institute — Hsinchu, Taiwan
Software Engineer Intern | Deep Learning · Web — *Jul 2016 - Feb 2018*

- Researched on Plants Recognition Project to classify and detect 240 Taiwan endemic plant species images with **Keras**; improved top-5 accuracy from 60.0% to 81.6% using ResNet-50
- Developed Story Map, a geographic based photo gallery utilizing **Google Map API**, on both web and Android for Taiwan's largest education media platform Cloudplay

Skills & Activities

- **Programming**: Proficient: Python, JavaScript; Familiar: Java, C++ **Web Development**: Node.js, React, Flask, PostgreSQL
- **Machine Learning**: Pytorch, Spark, Scikit-Learn, Numpy, Pandas, FastAPI **Tools**: Git, Azure, Docker, Bash, Travis CI
- **Organizations**: NTU Open Source Community: Open sourced campus support Chatbot and **extensions with 15,000+ users**; Code.org: Volunteer interpreter supporting high school computer science teachers in Taiwan

Selected Side Projects

Recommendation Website for CS Graduate Programs [FastAPI, PostgreSQL, Docker, Heroku] [Website] [Code] [Docs]

- Built APIs with **FastAPI** and **Postgres** that returns personalized program recommendations based on a student's background
- Deployed the website and Swagger docs on Heroku with a CI/CD workflow using **Docker Compose** and **CircleCI**