

# 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 2<sup>nd</sup> 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    **Teaching:** Teaching assistant of Calculus

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

**Coursework:** Algorithm, Data Structures, Operating Systems, Systems Programming, Data Mining, Applied Deep Learning

## WORK EXPERIENCE

### Apple

Cupertino, CA

Software Engineer Intern | PySpark · Spark ML · Tableau

June 2020 - Sep 2020

- 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 · PyTorch · Java · 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 · Salesforce

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; integrated the model with Telegram chatbot to support end users
- Developed and deployed a photo map feature using **Google Map API**, on Taiwan's largest education media website Cloudplay

## SKILLS & ACTIVITIES

- Programming Language:** Python, JavaScript, Java, C/C++, SQL    **Web Development:** Node.js, React, Flask, PostgreSQL
- Machine Learning:** Pytorch, Spark, Scikit-Learn, Numpy, Pandas, FastAPI    **Others:** Linux, Git, Azure, Docker, Bash
- Organizations:** NTU Open Source Community: Open sourced [campus support bot](#) and web extensions with **15,000+ users**

## SELECTED 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**

**Decentralized Donation Service for Streamers** [Solidity, Node.js] [[Web](#)] [[Code](#)]    3<sup>rd</sup> at Cobinhood Blockchain Hackathon

- Developed a decentralized donation platform with **React.js** and **Web3.js** to help streamers accept donations without fees
- Deployed an **Ethereum Smart Contract**, which records donations and triggers notification events on stream (Twitch, YouTube)