

# Po-Kai Chang

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## Education

Rice University, Houston, TX

Expected December 2020

Professional Master of Computer Science

National Taiwan University (NTU), Taipei, Taiwan

Overall GPA: 3.78/4.0

July 2015

Dual BS Degrees in Mathematics & Economics

Rank: 17/150

Minor in Computer Science

Three times of Presidential Awards (Top 5% in academics)

Key Courses: Algorithms, Linear Algebra, Machine Learning, Artificial Intelligence, Computer Networks, Operating Systems

## TECHNICAL EXPERTISE

**Programming:** JavaScript (ES5/ES6), Python (2.7/3.0), Scala, Java, C/C++, Linux Shell, Awk

**Web Development:** Express, Babel, React, HTML5, SCSS, Webpack, ESLint, Cypress, jQuery, WebSocket, Promise

**ML libraries:** Keras, Tensorflow, Horovod, SciPy, Scikit-learn, DL4j, LIBSVM, Matplotlib

**Database:** Redis, MySQL, Prometheus, MongoDB, Elasticsearch, SQLite, PostgreSQL

**Quality Assurance/Visualization:** Automation testing (Mocha, Chai), CI/CD (GitLab, Jenkins), Kibana, Grafana

**Others:** NumPy, Docker, Git, Nginx, AWS EC2, Kubernetes, Spark Cluster, Vim + Tmux, Kafka cluster, Design pattern (MVC, Composite), Regular expression, Object-oriented programming, EJS

## PROFESSIONAL EXPERIENCE

Chaintech Technology Corporation – Software Engineer – Taipei, Taiwan

May 2018 – August 2019

*Leading computer hardware manufacturer providing graphics cards and motherboards*

- Created an ML-driven cloud platform, SCMP, through Kubernetes with 5% of the competing solution cost.
- Developed SCMP's website by React enabling users to easily manage tasks and data in distributed machine learning.
- Reinvented and delivered Central Monitor System (CMS) to manage 2K+ mining rigs in an intuitive interface.
- Designed, implemented, and assisted in deploying backend infrastructures for both SCMP and CMS agilely.
- Led the development team and introduced to it the key frameworks as well as languages such as Kubernetes and Node.js.

Freelance – Software Engineer – Taipei, Taiwan

September 2017 – April 2018

- Analyzed e-commerce ecosystems and provided consulting to vendors to create maintainable products delivery plans.
- Reduced user complaints from startups' businesses by connecting more payment solutions to their backend logics.

Groundhog Technologies – Software Engineer / Data Scientist – Taipei, Taiwan

July 2015 – August 2017

*Leading provider of mobile big data analytics for leading mobile operators*

- Delivered our demand-side platform (MI DSP) for telecoms integrating 5.6M subscribers' data for precise ad targeting.
- Implemented highly scalable RTB modules in limited resources through Nodejs, Redis, and Kafka to support MI DSP.
- Designed MI DSP architecture and achieved secure offline deployment through Docker and shell scripts.
- Scaled MI DSP to process 5K+ queries per second from Ad Exchanges, user responses, and 3<sup>rd</sup> party monitoring sites.
- Built ad targeting models by Keras/TensorFlow and connected MI DSP with Ad Exchanges like Google DoubleClick.
- Innovated a user satisfaction indicator from telecom data by LIBSVM to improve user experiences in phone calls.
- Redesigned the geolocation labels classifier via subscribers' location attributes through RBM and DNN in DL4j.

## PROJECTS & ACTIVITIES

Machine Discovery and Social Network Mining Lab – Research Assistant – NTU, Taiwan

February 2015 – June 2017

- Researched in both multi-label multi-task demographic attributes prediction and recommendation systems (fake rating detection and correction) – MI DSP adopted optimization ideas from research for runtime bidding tasks.
- Implemented open-source SNE (Structured Neural Embedding) library in NumPy (<https://pypi.org/project/SNE-lab/>).

Special Research at Communication and Multimedia Lab – Research Assistant – NTU, Taiwan

February 2015 – June 2015

- Designed a Minecraft-like first-person shooter – crafted in Unity3D and compatible with Google Cardboard.

ICCAD 2015 Contest – Team leader – NTU, Taiwan

February 2015 – June 2015

- Proposed a variation on Greedy algorithm to solve Color Balancing for Double Patterning Problem within a week.

Asia-Pacific Student Entrepreneurship Society – Chief of Operation – Taiwan Branch

October 2012 – January 2014

- Held a salon discussion with entrepreneurs for students from Stanford and IIT during the summer international summit.
- Led the core operation team and held weekly fireside chats with entrepreneurs about their experience running startups.