Boyo Chen

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EDUCATION

National Taiwan University, Taipei, Taiwan

B.S. of Computer Science and Information Engineering — September 2012 - July 2016

M.S. of Computer Science and Information Engineering — September 2016 - July 2018

The University of Tokyo, Tokyo, Japan

Ph.D. of Complexity Science and Engineering — April 2021 - current

SKILLS

- Proficient
  - Python programming.
  - Machine learning algorithms and applications.
  - Data-intensive applications.
- Intermediate
  - C/C++ programing.
  - Document-oriented databases, such as MongDB.
  - Build and maintain Restful API and GraphQL API.
  - Distributed computing with Apache Spark.
- With Primary Knowledge
  - CICD: Jenkins, Docker, Kubernates.
  - Relation-oriented databases such as PostgreSQL and MySQL.
  - Object-oriented programming using Java, Android.

WORKING EXPERIENCE

Yahoo, Taipei, Taiwan — July 2017 - August 2017

Software Engineer Intern.

- Delivered a successful framework enhancing searching user experience within two month in Yahoo Global Search Team.
- Implement cluster-computing machine learning algorithms using Apache Spark.

Appier, Taipei, Taiwan — January 2019 - November 2019

Backend Engineer.

- Maintain legacy systems.
- Build and optimize a data-intensive api server with graphQL.

National Taiwan University, Taipei, Taiwan — December 2019 - Current

Research assistant.

- Co-work with Central Weather Bureau to improve operational forecasting procedure in tropical cyclone intensity estimation.
- Extend my master thesis to be more complete as a system, covering more aspect of tropical cyclone forecasting.

PUBLICATION

Rotation-Blended CNNs on a New Open Dataset for Tropical Cyclone Image-to-intensity Regression **Boyo Chen**, Buo-Fu Chen, Hsuan-Tien Lin
KDD 2018

- Carefully demonstrated several critacal properties of TC intensity estimation task.
- Adapted classical CNN structure to propose a innovative model with promising performance.
- Organized a new dataset of TC images for other fellow researchers.

Estimating Tropical Cyclone Intensity by Satellite Imagery Utilizing Convolutional Neural Networks Buo-Fu Chen, **Boyo Chen**, Hsuan-Tien Lin, Russell L. Elsberry
Weather and Forecasting April 2019, Vol. 34, No. 2

- Refine the conclusion from the previous work and publish the improvement to Atmospheric scientists.

Real-time Tropical Cyclone Intensity Estimation by Handling Temporally Heterogeneous Satellite Data **Boyo Chen**, Buo-Fu Chen, Yun-Nung Chen
Under review of AAAI 2021

- Use Generative Adversarial Network to handle missing data.
- Repair damaged visible light channel images which are collected during the night.
- Improve the estimating frequency of TC intensity from **1 per 3hr** to **1 per 15min**.

CNN Profiler on Polar Coordinate Images for Tropical Cyclone Structure Analysis **Boyo Chen**, Buo-Fu Chen, Chun-Min Hsiao
Under review of AAAI 2021

- According to a TC's rotational and spiral natures, developed a specialized convolutional model on polar-coordinates.
- Analyze the TC structure profile, consider not only intensity but also size of a TC, which is a barely developed yet important topic.
- Organized a new dataset of TC images for other fellow researchers.

RESEARCH EXPERIENCE

3D printing project of Ministry of Science and Technology February 2015 - June 2015
Work as a project member in a three-man sub-team.

- Were responsible for sketch-based 3D model retrieval.
- Designed a Siamese convolution neural network frame work base on sketch features and 3D object features.

National Taiwan University, Taipei, Taiwan June 2016 - July 2018
Research assistant of Professor Hsuan-Tien Lin in *Computational Learning Lab*

- Devote to improving recent deep learning structures and learning theirtheoretical foundations.

2015 IEEE Signal Processing Cup - Team MiRAHEALTH October 2014 - January 2015
Knowledge Discovery and Data Mining Cup 2017 March 2017 - June 2017
Knowledge Discovery and Data Mining Cup 2018 March 2018 - June 2018

OTHER EXPERIENCE

National Taiwan University, Taipei, Taiwan
Teaching assistant of Professor Hsuan-Tien Lin

- Machine Learning Foundations, 2016 fall — About 100 students.
- Machine Learning Techniques, 2017 spring — About 130 students.
- Machine Learning Foundations, 2017 fall — About 260 students.
- Machine Learning Techniques, 2018 spring — About 200 students.