Cheng Huang

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Doctoral Candidate in Computer Science Zhejiang University of Technology
Hangzhou February 12, 1997

Highly-motivated Doctoral Candidate in Computer Science focused Time Series Prediction with good foundations of deep learning and coding. Proficient in data modeling and analysis, and enthusiastic about weather forecasting, especially tropical cyclone prediction. With 4 years of experience in PyTorch, OpenCV, and Matplotlib open-source framework, familiar with various deep learning models and skilled in Python, and C++ programming. Passionate about open source and shared multiple projects on my GitHub. Meanwhile, 4 papers are published in famous journals and conferences.

Education

present September 2019	College of Computer Science, **Zhejiang University of Technology** Ph.D. candidate in Computer Science
June 2019 September 2015	School of Electronic and Information Engineering, **Ningbo University of Technology** Bachelor's Degree in Computer Science

Research and Industry Experience

Present
September 2019

Postgraduate Period

- Designed a **multi-modal framework** for tropical cyclone forecasting with heterogeneous meteorological data (Python, PyTorch, ERA5). [Code][Paper]
- Developed a **cone of probability prediction** with giving multiple potential tendencies of tropical cyclone (Python, PyTorch, LSTM, CMA-BST). [Code][Paper]
- Built a **multi-modal tropical cyclone tracking dataset** containing the satellite cloud image from Himawari-8 with the annotation of the tropical cyclone object and various meteorological information. (Python, QT). [Dataset][Paper]
- Designed a **multi-scale network–Res2-UNeXt** and a data augmentation method based on image registration to improve the performance of cell segmentation (Python, PyTorch, U-Net). [Paper]
- Used **deep learning methods** to classify images of different weather, including rain, snow, and so on. (Python, PyTorch, Resnet).

September 2021
July 2021

Internship in Piesat Information Technology Co.,Ltd.

- Explored the relationship between **the architecture and the surface wind** in cities (Python, Informer).
- Analyzed the data from different satellite, uniformed the resolution of these data, and fused these data together to **generate the global ocean data**, including sea surface temperature, sea surface wind and so on (Python).
- **Embedded previous projects**, like tropical cyclone forecasting, in the system developed by the company (Python, C#, QT).

July 2019
September 2015

Phase of Undergraduate

- Attended the second College Student Robot Competition in Zhejiang Province and developed the module of object detection in robots (Python, Faster-RCNN).
- Developed a program to judge the clarity of images obtained by microscope and control the electrical machinery to focus and obtain the most clear cell images (C#, C++, OpenCV).
- Developed a program to detect the earthquake phenomena in surveillance videos and estimate the earthquake magnitude of this earthquake phenomena (C++, OpenCV).

Publications

- **Huang, C.**, Bai, C., Chan, S., Zhang, J., & Wu, Y. (2023). MGTCF: Multi-Generator Tropical Cyclone Forecasting with Heterogeneous Meteorological Data. Proceedings of the AAAI Conference on Artificial Intelligence (AAAI-2023) (Accepted)
- **Huang, C.**, Bai, C., Chan, S., & Zhang, J. (2022). MMSTN: A multi-modal spatial-temporal network for tropical cyclone short-term prediction. Geophysical Research Letters, 49, e2021GL096898. https://doi.org/10.1029/2021GL096898 (Published, JCR Q1, Nature index journal, IF=5.576)
- **Huang C.**, Chan S., Bai C., Ding W., & Zhang J. (2021) Tropical Cyclones Tracking Based on Satellite Cloud Images: Database and Comprehensive Study. In: Lokoč J. et al. (eds) MultiMedia Modeling (MMM-2021). Lecture Notes in Computer Science, vol 12573. Springer, Cham. https://doi.org/10.1007/978-3-030-67835-7_2 (Published)
- Chan, S., **Huang, C.**, Bai, C. et al. Res2-UNeXt: a novel deep learning framework for few-shot cell image segmentation. Multimed Tools Appl (2021). https://doi.org/10.1007/s11042-021-10536-5 (Published, JCR Q2, IF=2.577)

Competences & Languages

Programming	Python, C++, C#
Data Analysis	PyTorch, Pandas, Matplotlib, OpenCV
Languages	**Mandarin** (Native User), **English** (competent User IELTS 6)

Awards

November 2022	National Scholarship
December 2021	Second prize in the school Canal Cup competition
October 2020	University second-class scholarship
June 2019	Outstanding graduates of Zhejiang Province
November 2018	Zhejiang Provincial Government Scholarship
May 2018	Second prize in the second College Student Robot Competition in Zhejiang Province
November 2017	Zhejiang Provincial Government Scholarship
December 2017	First prize of Zhejiang Physics Competition
November 2016	School merit student