SONGCHEN LI

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EDUCATION

Nanjing University of Information Science & Technology, China 09/2021 - 06/2025

●Bachelor of Science in Atmospheric Sciences (Atmospheric Physics) (Expected) CGPA:3.2

- Core modules: Atmospheric Physics, Fluid Dynamics, Fundamentals of Synoptic Meteorology, Programming and Graphing for Meteorology, Boundary Layer Meteorology, Dynamic Meteorology, Numerical Modeling.

RESEARCH INTERESTS

●Numerical modeling, Tropical cyclones, Planet boundary layer, Machine learning

PAPERS

- **Li, S. & Li, Y.**, the first author, Improve CMA Tropical Cyclones Intensity Forecast Using Long Short Term Memory Networks. -**Under Preparation**.
- **Wang, J., Li, S, Zhang, Y., Luo, Z., Wang, W., Hu, H., Chen A.,** the second author, Evaluation and quantification of surface air temperature variations from ERA5-Land in China during 1951-2020[J], Atmospheric Research - **Under Review**.
- **Wang, J., Li, S, Zhang, Y., Luo, Z., Wang, W., Hu, H., Chen A.,** How does the frequency of snowfall change and respond to the climate in the upper Irtysh River Basin, Western Siberia?[J], International Journal of Climatology - **Under Review.**

RESEARCH EXPERIENCE

- **Quantitative Remote Sensing Study on Snow Grain Size and Snow Melting Process of Typical Watershed in Tianshan Mountains Region** 03/2024 –10/2024

  Advisor: Assoc. Prof. Jiangeng Wang, School of Atmospheric Physics, Nanjing University of Information Science & Technology

  This project is funded by the National Natural Science Foundation of China (Grant No. 41871238).

  -Extracted data from meteorological stations in given areas, analyzed the discrepancies between observed and analyzed data like ERA5 by pandas (mainly), calculated statistics and analyzed the correlations and relevance;

  -Visualized these data for comprehensive interpretation of the internal climate relations.
- **Exploration of the Deep Learning Classification and Regression Algorithms Effect on Tropical Cyclones Intensity Prediction** 04/2023 – present

  Advisor: Professor Yubin Li, School of Atmospheric Physics, Nanjing University of Information Science & Technology

  -Conducted comparative analysis of regression and classification modes of various deep learning models and used the models to improve Tropical Cyclones forecast data released by CMA;

  -Utilized web spider to obtain TC forecast data released by the CMA and FNL data released by the UCAR. Analyzed and merged data using pandas etc. to build datasets.

  -Authored research reports and academic papers on findings.
- **Using Fengyun Series Geostationary Satellites to Extract Cloud Top Brightness Temperature of Blizzard Cloud Systems and Categorize Cloud Life Span** 10/2023 - 03/2024

  Advisor: Assoc. Prof. Jiangeng Wang, School of Atmospheric Physics, Nanjing University of Information Science

& Technology

-Analyzed and graphed precipitation data from meteorological stations within the specified regions. Acquired raw brightness temperature data from FY-4A and FY-4B satellites, interpolated the data into a grid format, and graphed.

- **Predicting Intensity and Routines of Tropical Cyclones Using Ridge Regression** 03/2022 - 03/2023

  Advisor: Assoc. Prof. Jiandong Wang, School of Atmospheric Physics, Nanjing University of Information Science & Technology

  -Utilized ridge regression algorithm to analyze and predict TC intensity and track by analyzing the TC best track data and ERA5 reanalysis data;

  -Acquired typhoon best track data and ERA5 reanalysis data, followed by data processing using numpy and pandas to construct and preprocess datasets;

  -Developed a ridge regression model to predict the intensity and track of TC.

PROFESSIONAL EXPERIENCE

- **Guangdong Meteorological Observatory, China** 07/2024 - 08/2024

  -Participated in Guangdong Province Weather Consultation and National Weather Consultation;

  -Prepare and deliver presentations for Weather Consultation based on the analysis from weather maps.

  -Gained experience with the complete TC processes of Typhoon **Gaemi(** No. 3) and Typhoon Prapiroon(No. 4), enhancing understanding of TC by analyzing the process.

EXTRACURRICULAR ACTIVITIES

- **MTwin Industrial Digital Twin System** 02/2023 - 11/2023

  Advisor: Dr. Ying Jiang, School of Business, Nanjing University of Information Science & Technology

  -Developed an industrial digital twin system based on Unity engine, for the Naikela UAV production line, allowing users to remotely monitor and control production line equipment;

  -Created data scenes using Unity engines and programmed object movements within these scenes. Abstracted the data structure for digital dashboard and digital twin visualization.

AWARDS & HONORS

- **National First Prize** in National College Business Elite Challenge Innovation and Entrepreneurship Competition "Jingchuang Education Cup" in August 2023.
- **Provincial Second Prize** in China College Students Engineering Practice and Innovation Ability Competition in November 2023.
- **Provincial Third Prize** in Blue Bridge Cup National Software and Information Technology Professional Talent Competition, Python Algorithm Design Track in April 2023.
- **Three-Good Student** 2022.
- **Scholarship of Nanjing University of Information Science & Technology** 2022, 2023.

SKILLS

- **Languages:** Mandarin (native), English (fluent: IELTS 6.5), Japanese (basic)
- **Technical Skills:** Microsoft Office, Web Spider, Linux, Markdown, Git, etc.
- **Programming Languages:** Python, Fortran, C#, C, Shell Script.
- **Hobbies:** Music, Gaming, Exploring