Jia Jun Chang

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Education

National Taiwan Normal University **Taipei, Taiwan**

- Master of Arts, Geography *Sept. 2022 – June 2024*
- Thesis topic: An Approach Integrating Spatial Factors via Convolutional Operations in Artificial Neural Network: Real Estate Appraisal as Case Study
- Advisor: Professor. Chang Kuo-Chen
- GPA: 3.925/4.000

National Taiwan Normal University **Taipei, Taiwan**

- Bachelor of Arts, Geography *Sept. 2018 – June 2022*
- Research Interests: Geospatial Modeling, Remote Sensing, GeoAI
- Advisor: Professor. Chang Kuo-Chen
- GPA: 3.802/4.000

Research Experiences

National Taiwan Normal University **Taipei, Taiwan**

Research Assistant, Lab of Geospatial and Remote Sensing *Oct. 2022 – July 2023*

- Participated in a Ministry of Science and Technology(MOST) research project guided by Professor. Chang: Development of Spatial-temporal Continuous Air Quality Prediction Model by Integrating Data from Multi-environmental Information and Taiwan Air IoTs Wide Array Network (TAIWAN) sensors.
- Responsible for the implementation of several analysis algorithms such as Geographically and Temporal Weighted Regression(GTWR) and Artificial Neural Networks in predicting concentrations of particle matter.
- In charge of preprocessing large amounts of air quality sensor data.

National Taiwan Normal University **Taipei, Taiwan**

Research Assistant, Lab of Geospatial and Remote Sensing *Oct. 2021 – Oct 2022*

- Participated in the collaborative industry-academia project with the China Credit Information Service: Implementation of Real Estate Appraisement Decision Support System.
- Dedicated to the development of the Full-Stack web application integrating geospatial analysis with traditional appraisal algorithms.
- Explored the feasibility of applying the Actual Price Registration data(APR) to traditional appraisement scenarios.

National Taiwan Normal University **Taipei, Taiwan**

Research Assistant, Lab of Geospatial and Remote Sensing *Oct. 2021 – June 2022*

- Participated in the collaborative research project with the Industrial Technology Research Institute: Implementation of Mobile Air Quality Sensor Data Application Platform.

- Dedicated to the development of the Full-Stack web application integrating geospatial analysis with mobile air quality sensor data in multi-temporal dimensions.
- Preprocessed large amounts of mobile air quality sensor data, and implemented several geospatial analysis functions using Arcpy.

National Taiwan Normal University **Taipei, Taiwan**

Research Assistant, Lab of Geospatial and Remote Sensing *Jan. 2021 – Oct 2021*

- Participated in the university research project advised by Professor. Chang: A Spatial Decision Support System for Hydrological Landscape Ecology Conservation in Smart City.
- Implemented a semantic segmentation model called U-NET to achieve pixel-based classification of multi-temporal satellite images.
- Secured and digitized multi-temporal satellite images of the research area, and pre-processed these satellite images into the data pipeline.

Professional Experiences

China Credit Information Service **Taipei, Taiwan**

Researcher and Full-Stack Developer *Sept. 2022 – present*

- Established and implemented the data-preprocessing procedure and system schema of Actual Price Registration data (APR) released by Ministry of the Interior, ROC.
- Integrated geospatial technology with internal appraisal algorithms, building a highly automated appraisement process.
- Designed and implemented the appraisal decision support systems, including implementations of appraisal algorithms.

NADI System Corp. **Taipei, Taiwan**

Intern Developer *Mar. 2020 – Sept 2022*

- Contributed to web GIS platform based on Cesium(3D) and backend application, intensively working with React, Typescript, and Tailwindcss.
- Worked closely with senior developers and technical leaders to integrate 3D GIS technique with the Building Information Model, and participated in several projects with clients such as Delta Electronics, Fetnet, and F5.

Interactive Digital Technologies Inc. **Taipei, Taiwan**

Summer Intern *Jul. 2019 – Sept 2019*

- Explored ESRI technology ecosystem and its products, including ArcGIS Online, ArcGIS Apps, and ArcGIS Developer API.
- Participated in the project of Aerial Survey Office, and implemented a multi-temporal aerial images comparison web app using ArcGIS Maps SDK for Javascript.

Technical Skills

Programming Skills

- Frontend: React.js, Next.js
- Backend: Express.js, Nest.js, PostGIS, Docker
- GIS: ArcGIS Pro, ArcGIS Maps SDK for JavaScript.
- Data Analysis & Deep learning: Python, Pytorch
- Operating System: Ubuntu Linux, Windows

Language

- Mandarin Chinese (Native)
- English (Fluent) (TOEIC 875) (TOEFL 103)

Publications

Journal Paper

Chang J. J., Chang K. C. (2023). An Approach Integrating Spatial Factors via Convolutional Operations in Artificial Neural Network: Real Estate Appraisal as Case Study. *Journal of Geographical Research.* (Accepted)

Chen Y. J., Chang J. J., Chang K. C. (2021). Estimation of space-time traffic corridor earthquake risk exposure based on cellular trajectory data. *Journal of Geographical Research, 74(105-141).* (Original paper written in Chinese)

Conference Paper

Chang J. J., Chang K. C. (2023). Semi-supervised Generative Adversarial Network for Identifying Cellphone Crop Images. *2023 Taiwan Geographic Information Society Annual Conference and Academic Symposium.*

Chang, J. J., Chen, C. H., & Chang, K. C. (2021). Constructing a Multi-temporal PM2.5 Estimation Model Using Temporal Geographically Weighted Regression. *2021 Taiwan Geographic Information Society Annual Conference and Academic Symposium.* (Original paper written in Chinese)

Chang, J. J., & Chang, K. C. (2020). Convolutional Neural Networks for Crop Image Recognition Based on Transfer Learning. *2020 Taiwan Geographic Information Society Annual Conference and Academic Symposium.* (Original paper written in Chinese)

Conference Presentation

Chang J. J., Chang K. C. (2023). Using Convolution Neural Network as Environmental Features Extraction Pipeline – taken Real Estate Appraisal as a precedent. 2023 Association of American Geographers, Denver, CO.

Honor and Awards

Scholarship for Outstanding Doctoral and Graduate Students *Oct 2023*

- *National Taiwan Normal University has established this Scholarship to motivate doctoral and graduate students of academic excellence to achieve their higher education goals.*
- Only one graduate student can earn this honor in each department Graduate Institute.

Outstanding Student Paper Award *Dec 2020*

- *2020 Taiwan Geographic Information Society Annual Conference and Academic Symposium.*
- Only one presenter can earn this award in each session.

Presidential Intellectual Education Award *May 2020*

- *Students with outstanding academic performance or achievements are eligible for the award.*
- Only one student can earn this award in each academic year.

Leadership and Extracurricular Activities

Sharing Expertise, Lab of Geospatial and Remote Sensing *Mar. 2021 – present*

- After several years of learning and training under the guidance of Professor.Chang, I started to organize weekly technical and research meetings with undergraduates.
- Contributed to knowledge and expertise sharing by conducting practical programming workshops and tutorials.
- Domain knowledge and know-how are the greatest assets of an individual. I'm more than willing to share valuable knowledge with others to benefit not just the entire lab but also the future careers of students.

Member, Securities Research Society, NTNU *Sept. 2018 – June 2019*

- Participated in the discussion and meeting with members and leaders, and acquired several statistical methods and a more comprehensive understanding of the stock market.

References

Kuo-Chen Chang, PhD. **University of Minnesota, Twin Cities**

- Professor
- Department of Geography, National Taiwan Normal University
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