Jiangpan Bian

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EDUCATION BACKGROUND

University of Michigan-Ann Arbor, Ann Arbor, MI **Expected 05/2026**
Master of Science in Environment and Sustainability, Concentration in Geospatial Data Sciences
GPA: 4.00 / 4.00
Graduate Certificate in Complex Systems (five additional courses post-master's degree)
Coursework: Principles of Geographical Information Systems (GIS), Advanced Geovisualization, Remote Sensing, Computer Modeling of Complex Systems, Theory of Complex Systems

Wuhan University, Wuhan, China
09/2020-07/2024
Bachelor of Engineering in Computer Science and Technology | GPA: 3.76 / 4.00
Coursework: Data Structures, Computer Organization and Design, Operating Systems, Computer Networking, Database Systems, Machine Learning and Pattern Recognition, Java EE Architecture Programming

PROJECT EXPERIENCE

Analysis on the Traffic Crash on Detroit's Road Network
Urban Network Course Design, Advisor: Prof. Xiaofan Liang. **10/2025-11/2025**

- Built a topologically valid Detroit street network in ArcGIS Pro and Python by cleaning geometry, merging segments, and resolving connectivity issues.
- Computed betweenness and closeness centrality for ~20k intersections using Python, evaluating their relationship with crash frequency.
- Identified high-risk intersections and corridors; visualized spatial patterns and statistical correlations using GIS and Python.
- Produced analytical maps and charts to support insights; delivered written report

Analysis on the Green Space Equity of Missouri
Geovisualization Course Design, Advisor: Prof. Derek. Van. Berkel **12/2024-01/2025**

- Used ArcGIS Pro to visualize Missouri's poor family percentage and canopy coverage
- Performed data analysis in Excel to explore the relationship between green space coverage and poverty percentage
- Created an academic poster to exhibit the researching background, methods and results

Shapefile Data Management Platform **01/2024-05/2024**
WebGIS full-stack Development

- Designed and developed back-end interfaces for a Shapefile data processing platform by using the Springboot Framework and GeoTools library; performed testing to confirm proper API integration
- Built front-end components using Vue3 and OpenLayers, enabling browser-based visualization and manipulation of spatial data
- Designed relational database schemas and completed deployment of the full-stack platform

Research on Karst Rocky Desertification in Southwest China based on Remote Sensing data
Team Leader **05/2023-07/2023**

- Led a group project titled "Research on Karst Rocky Desertification (KRD) in Southwest China based on Remote Sensing data", and organized topic discussions and assigned tasks to team members
- Analyzed the change trends and causes of KRD, and visualized multi-year precipitation and average temperature data using Python

- Speculated on the correlation between the degree of KRD and terrain, land use types, and human activities, conducting a thorough correlation analysis in the project
- Served as the main presenter for project outcomes during the presentation

INTERNSHIP EXPERIENCES

PIESAT Information Technology Co., Ltd. Beijing, China **07/2023-08/2023**

Back-end Development Intern, Department of Smart Forestry and Grassland

- Contributed to the drone-based “Forest Eye” platform by developing back-end interfaces for animal protection, pest control, and forest fire prevention modules
- Designed and implemented database schemas based on software requirements, and completed detailed documentation for both APIs and data tables
- Engaged in weekly code review meetings, explained the work and code implementation approach, and compiled weekly reports summarizing development progress

Chinese Academy of Surveying & Mapping, Beijing, China **07/2022-08/2022**

- Gained proficiency in the PyQt development framework by independently building multiple demo applications
- Contributed to the development of a carbon asset accounting software system using PyQt, with responsibilities including user interface (UI) design and algorithm interface integration
- Implemented most basic functionalities of the software and used Pyechart library to visualize basic data and calculation results. Resulted in a well-designed interface, inspired by GIS software like ArcGIS and QGIS

RESEARCH EXPERIENCES

Network Analysis and Visualization Platform Development of Geographical Multiple Flows

Member, Back-end Development, Prof: Kun Qin **Wuhan, China**

02/2022-06/2023

- Contributed to the backend development of a Geographical Multiple Flows visualization platform using the Spring boot framework
- Utilized the Selenium framework in Python to scrape health industry trade data from the World Trade Data website
- Attended project meetings, assisted in platform interface design, and contributed to functional improvements

PROFESSIONAL SKILLS

Programming Skills: Java; Python; JavaScript; Html; R
Web Development: Vue.js, HTML, CSS
GIS/RS Skills: ArcGIS Pro; QGIS; GEE; ERDAS IMAGINE
Language: English(Fluent); Mandarin(Native)