

Skylar Yu (Mengfan)

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EDUCATION

University of Michigan, School for Environment and Sustainability

Michigan, Aug '22 — May '25

Master of Science in Geospatial Data Science & Sustainable Systems

Master's project: Activating Public Land to Promote Urban Agriculture for Community Health, Equity, and Resilience through a GIS Decision-Making Webtool

• Course Highlights: GIS, Geovisualization, Environmental Systems Analysis, Remote Sensing, SQL & Databases, Multivariate Statistics, Natural Resource Statistics, Python for GDS, Industrial Ecology

Anhui Normal University

CHN, Sep '16 — Jul '20

Bachelor of Science in Geography in School of Geography and Tourism

Thesis: Spatial Distribution Patterns, Formation Mechanisms, and Planning Responses of Shrinking Cities: A Case Study of Anhui Province

• Course Highlights: Human Geography, Environmental Geography, Soil Geography, Linear Algebra, Advanced Mathematics

TECHNICAL SKILLS

- **Software:** ArcGIS Pro, ArcGIS Online, Arcpy, ArcGIS Enterprise, ArcGIS Field Map, Survey123, QGIS, ERDAS Imagine, ENVI, Google Earth Engine, Experience Builder, Pix4D, Power BI, SPSS, Mapbox
- **Programming Languages:** Python, R, SQL, HTML, CSS, JavaScript
- **Professional Skills:** Data Analysis & Visualization, Programming & Database Management, Environmental System Analysis, Remote Sensing

WORK EXPERIENCE

Sustainability Associate, Geospatial Modelling

Aug '24 — Present

Responsible Alpha

- Independently developed **Toxic Release Inventory (TRI)** maps based on **U.S. congressional districts** and state-level environmental policy support rates. Leveraged **ArcGIS Online, Mapbox, Story Map, and JavaScript, HTML, CSS** to create interactive and user-friendly interfaces for public engagement
- Developing a **GIS-based solution** to identify abandoned tire disposal sites using **remote sensing** and **machine learning** techniques, enhancing **waste management** efficiency across Wyoming (ongoing).
- Working with a Data Scientist to map abandoned tire sites and plan recycling **routes** using GIS and remote sensing for Wyoming's waste management program (ongoing).

Geospatial Analyst, Student Worker

Dec '22 — Apr '24

Los Angeles County Chief Sustainability Office

Los Angeles, United States (Remote)

- Developed a geospatial web dashboard (**ESRI Experience Builder**) and resources to support community-based urban agriculture
- Utilized **SQL** to filter and identify potential parcels for **urban agriculture** development, optimizing site selection and enhancing project feasibility
- Assess quality control and perform data audits to ensure the integrity of operational GIS data
- Enhancing public land utilization and increasing community engagement

Renewable Energy Analyst (Intern)

Oct '23 — Mar '24

Chevron

Remote

- Conducted comprehensive analysis of state-driven demand policy incentives for renewable natural gas (RNG), assessing potential influence on carbon emissions reduction that informs strategies for sustainable transport development.
- Researched and compiled a detailed analysis report on federal and state incentives for renewable natural gas (RNG) projects, informing strategic planning and leading to the prioritization of 3 states with high potential for RNG adoption.
- Conducted research and analysis on the feasibility of implementing a sustainable transportation program, resulting in a 15% reduction in carbon emissions.

GIS Analyst

Apr '19 — Aug '20

Anhui QianMo Network Technology Co., Ltd.

China

- Developed a **monitoring system** for the Yangtze River **endangered animals conservation area**, processing and analyzing environmental data
- Utilized **Python** to manipulate **LiDAR data and high-resolution remote sensing imagery** for the finless porpoise reserve, shared via **GitHub** repositories
- Ensured precise environmental monitoring through the integration of multi-source data

RESEARCH PROJECTS

Life Cycle Assessment Analysis Project

Feb '24 — Apr '24

- Executed a comparative Life Cycle Assessment (LCA) by using SimaPro to compare the environmental impacts of polyester-based and cotton-based t-shirts in fast fashion versus sustainable clothing industries.
- Created a detailed report assessing environmental impacts, including raw material sourcing, production energy use, and end-of-life garment processing.
- The analysis influenced the strategic direction of sustainable clothing lines by identifying key areas for environmental impact, leading to a shift towards more sustainable materials.

Multivariate Analysis Project Analyzing the Environmental Footprint of Food and Nutrition

Oct '23 — Dec '23

- Utilizing Python and R for in-depth statistical analysis like PCA and Cluster Analysis to study the environmental impacts of diets.
- Showcasing advanced statistical skills to uncover insights into food system sustainability and carbon footprint reduction.
- Aligning sustainable nutrition understanding with United Nations SDGs, emphasizing informed choices for environmental conservation.

Circular Economy Model Analysis Project

Feb '23 — May '23

- Evaluated energy use and global warming impacts of traditional use-dispose container models versus Loop's circular economy model for Haagen-Dazs ice cream packaging.
- Analysis revealed Loop's model significantly reduces energy consumption and greenhouse gas emissions by 39% and 38%, respectively, compared to traditional single-use models.
- Demonstrated the tangible benefits of transitioning to circular economy principles, emphasizing reduced environmental footprint through innovative packaging solutions.

Using UAV Data to Classify Forest Canopy in Genus Level, Biostation

Jul '23 — Sep '23

- Assisted in a project utilizing UAV data to classify forest canopy at the genus level, enhancing ecological monitoring and conservation efforts with geospatial analysis techniques.
- Contributed to integrating high-resolution UAV imagery with comprehensive field data for forest canopy classification, optimizing precision through spatial analysis.
- Participated in evaluating different classification methods for accurate canopy genus-level classification, providing insights that contributed to scientific discussions on methodological advancements.

Geospatial Analysis and Visualization Project, University of Michigan

Sep '22 — Dec '22

- Use R to locate toxic release points in Wayne County, MI, by parsing a JSON file. Conducted temporal and spatial impact analyses on neighboring areas, incorporating data acquired through Census API
- Developed interactive web application using R Shiny and generated comprehensive reports emphasizing environmental justice, effectively visualizing and presenting the results

Student Consultant in Neepsend Regeneration Program, Sheffield City Council

Feb '21 — May '21

- Designed an Area Action Plan to regenerate an accent industrial area, Neepsend
- Analyzed local and national policies and the semi-structured interviews conducted by Professor Zheng Wang to identify critical points and propose new policies
- Designed floor plan of Neepsend by CAD, including open space and public facilities

Research on Shrinking Cities in Anhui Province in China, Anhui Normal University

Oct '19 — Mar '20

- Identified the shrinking area whereby the data from the national population census using ArcGIS
- Cleaned 300+ data points in Excel, imported the cleaned data into ArcGIS, and displayed the population change of each district
- Analyzed the formation mechanism of shrinking cities in Anhui Province, the data on shrinking areas, and offered suggestions for shrinking areas based on regional characteristics