SIHAN REN

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EDUCATION

Cartography & Geographic Information Systems B.S.
Computer Sciences B.S. | May 2023

University of Wisconsin-Madison • Madison, WI

WORK EXPERIENCE

GIS technician | Wisconsin Sea Grant Institute| Sep 2022 – May 2023 | Madison, WI
- Updated the ArcGIS story map from the book *People of the Sturgeon* by adding interactive maps and interviews representing sturgeon range, Wisconsin dam barriers and restoration efforts.
- Conducted a spatial analysis of property values along the Great Lakes to show how researchers can use the coastal data collection.
- Created a summary of 1370 coastal datasets on Geodata@Wisconsin cross-referenced by creators and subjects.

GIS developer | State Cartographer's Office | Feb 2022 - May 2023 | Madison, WI
- Published the 2022 Edition reference map atlas book of 8 regions and 20 specific cities for the Wisconsin Department of Corrections, including the clients' density, the field office locations, and the residential facilities.
- Updated the Wisconsin LiDAR web map through a viewed table by Arcade expressions to filter the popup window and link to the Geodata@Wisconsin by year and county name. Classified the choropleth map by the latest data acquisition year and added the ArcGIS Online map to instant apps to limit the zoom range.
- Designed a python tool for ArcGIS Pro to sort the uncategorized aerial photo records in Wisconsin into folders by county names and years with an index shapefile and get the photo records from a user's required region.
- Troubleshooted unmatched records in the aerial photo index and contacted USDA staff to verify.

Robinson Map Library Staff | UW-Madison Department of Geography | Sep 2021 - May 2022 | Madison, WI
- Updated metadata for the new 2022 geography data layers for 72 counties in Wisconsin to the GeoData website.
- Edited the 226 Lidar tilesets of Wisconsin county data in JSON format and tested them on the GeoData website.
- Scanned maps and aerial photos based on customers' requirements and answered their questions.

RESEARCH & PROJECTS

Covid-19's impact on Ethnic Restaurants in Madison (Capstone Project) | Sep 2022 – Dec 2022
- Made statistical charts from 203 survey responses and 4 interviews with Madison residents and restaurant owners to analyze the relationship between ethnic restaurants business and human mobility under the Covid pandemic.
- Built maps to visualize the geographic pattern of 359 Madison's ethnic restaurants in 2019 and identified 45 closed restaurants impacted by Covid-19.

Anti-Asian Crime Map in New York City | Apr 2022 – May 2022
- Coded by leaflet and d3 library in Javascript from GeoJson data to build an interactive map that contains the Asian hate crime rate and news from 2010 to 2021 sorted by crime types by clicking the buttons and slides with a line chart coordinated visualization.

Public Land Access Analysis | Jan 2021 – May 2021
- Collected data on official websites and joined the tables into the shapefiles to analyze adaptable public land parcels.
- Used the closest facility and network analysis tool in ArcGIS Pro by analyzing the distance from each metropolitan area to each public land and made the maps to show the level of accessibility.

Historical Aerial Photo Index Machine Learning Research | Oct 2021 – Dec 2021
- Wrote the program using the Python OpenCV HoughCircles function to detect the circles drawn manually in the map to generate images highlighted with those circles and discussed possible solutions to optimize the results.
- Used ArcMap to georeference the historical aerial photo index maps in Wisconsin and write a weekly summary report of the progress and meeting contents.

AWARDS

Barbara Bartz Petchenik Memorial Award (Undergraduate level) | UW-Madison | May 2021 | Madison, WI
- Designed a map of the homeless impact and available housing during the COVID-19 pandemic in California through two representative dates to appeal to people to care more about social issues.

Dean's List: Spring 2020, Fall 2020, Spring 2021, Fall 2021, Fall 2022

SKILLS

Computer Sciences: Html/ CSS/ JavaScript, React, React Native, Dialogflow, Java, Python, SQL, C++, Haskell, Rust
Cart & GIS： Esri Products, QGIS, Mapbox, Adobe Illustrator, Adobe XD, Figma, ArcPy, leaflet, D3, ENVI