

Eugenie Huang

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SKILLS

Geospatial Technology: ArcGIS Pro, QGIS, ArcGIS Online, ArcGIS SDK for JS/Python, Leaflet.js, ArcPy, GDAL/OGR, PDAL

Programming Languages: C#, Python, HTML, JavaScript, CSS, SQL, CQL, Query DSL

Web & Full-Stack Development: Svelte, Angular, React, Calcite, Bootstrap, Material, Flask, ASP.NET Core, Figma, MSAL

Databases & Data Processing: Microsoft SQL, Elasticsearch, MongoDB, Cassandra, Neo4j

Data Analysis & Visualization: Grafana, Apache ECharts, Tableau

DevOps & System Administration: Windows Server, Linux, VMware VDI, Docker

Graphic Design: Photoshop, Illustrator

PROFESSIONAL EXPERIENCE

GeoDS Lab, Madison, WI

May 2025 – Present

Research Assistant

- Co-develop a benchmark to evaluate spatial reasoning in large language models (LLMs), analyzing 4,000+ geometry pairs across classification, topological relations (DE-9IM) and directional estimation tasks.
- Collaborate on an interdisciplinary AMR research initiative across the GeoDS Lab, State Cartographer's Office, School of Pharmacy and Marshfield Clinic Research Institute to map spatial patterns of antibiotic resistance in Wisconsin.
- Lead geospatial data preprocessing and offline geocoding using ArcGIS StreetMap Premium; cleaned, filtered and aligned public health datasets for high-resolution census block group analysis.
- Perform advanced spatial statistics (hotspot analysis, spatial lag/error models) in ArcGIS Pro to reveal geographic disparities and hidden drivers of antimicrobial resistance.

State Cartographer's Office, Madison, WI

Sept. 2024 – Present

Project Assistant (Aug. 2025-Present)

- Lead the WisDOT Right of Way Plats Georeferencing Project, managing all phases from planning and workflow development to delivery. Act as the primary liaison between the Wisconsin Department of Transportation (WisDOT) and SCO, ensuring strategic alignment and timely execution of project goals.
- Manage and mentor a team of three undergraduate interns, providing onboarding, technical training in ArcGIS-based georeferencing and ongoing performance oversight to maintain data integrity and process consistency.
- Own project oversight including budget tracking, timeline adherence, QA/QC review and stakeholder reporting. Initiate cross-agency communication strategies and contribute to staff bi-weekly meetings to ensure transparent progress updates and issue resolutions.

GISPP Fellow (Sept. 2024-July 2025)

- Independently led the migration of Pronounce Wisconsin and Wisconsin Bearing Tree to the ArcGIS Online ecosystem, improving long-term maintainability and public usability, by configuring Web Maps, Instant Apps and Experience Builder to replace legacy systems and streamline data access.
- Supported the modernization of Survey Control Finder and PLSS Locator applications, boosting performance and system longevity, by transitioning from Leaflet.js to ArcGIS Map Components and Maps SDK for JavaScript.
- Optimized historical aerial imagery acquisition for WHAIFinder, reducing retrieval time by 81%, by refining Python scripts to interface with the USGS M2M API and integrating ArcPy for efficient bulk downloads.

City of Round Rock, Round Rock, TX

May – Aug. 2025

GIS Intern

- Modernized a legacy GIS web system by contributing to the migration of the CityView platform from pure JavaScript to a modular React/Vite architecture. Implemented object-oriented structures, optimized Arcade expressions, inline CSS, and embedded dynamic charting to improve performance, maintainability, and data visualization across Web Maps.
- Developed GIS-based operational tools for the Water Conservation, Fire, and Flood Emergency teams. Designed and deployed ArcGIS Field Maps, Dashboards, and Experience Builder solutions integrated with ArcGIS Online Notebooks using Python SDK, enabling real-time field data collection and seamless synchronization with enterprise feature layers.
- Mapped 300+ Monarch trees and labeled 100+ protected parcels, supporting enforcement of the city's tree protection ordinance by linking tree locations with parcel boundaries and developing a real-time monitoring dashboard. Extended the project into a remote tree canopy exploration tool by integrating LiDAR 3D View, aerial imagery basemap and Google Street View.

Nature4Justice & Nature Focus, Madison, WI

Jan. – May 2025

GIS Volunteer

- Collected and preprocessed publicly available geospatial data using QGIS to support conservation projects across the US and Canada, ensuring spatial accuracy for Indigenous forests, ranches, and timberlands.
- Performed biomass estimation, carbon storage calculations, and site suitability analyses to identify high-impact areas for Indigenous-led carbon initiatives and climate resilience strategies.

Sun-Net Cyber Inc., Taipei, Taiwan

June 2019 – Aug. 2024

Senior Software Engineer (2022-2024) on Geospatial Team

- Optimized automation solutions powered by Large Language Models (LLMs) for the extraction of geolocation and metadata, resulting in a 54% enhancement in the efficiency of maritime intelligence processing and a significant reduction in manual intervention.
- Dedicated to an advanced real-time automatic alarm system to bolster surveillance of maritime activities surrounding high-value assets, thereby improving threat detection and response capabilities.
- Spearheaded the comprehensive development of a Web GIS platform that provides government and healthcare institutions with real-time spatial analytics, facilitating the optimization of COVID-19 response strategies and informed decision-making.

Project Manager and Senior Software Engineer (2019-2022) on Artificial Intelligence Team

- Contributed to comprehensive user research and conducted a UI/UX redesign, optimizing workflows and delivering tailored machine learning and deep learning solutions that enhanced customer efficiency by 40%, thereby streamlining daily operations.
- Engineered and deployed a real-time cybersecurity alert dashboard and an automated broadcasting system, facilitating the seamless transmission of security warnings from servers to email and mobile applications, which improved threat response time by 27%.

LC Networks Communication Inc., Taipei, Taiwan

July 2014 – May 2019

Junior Software Engineer (2017-2019) on Application Development Team

- Redesigned and optimized the architecture of a large-scale search engine, enabling seamless processing of over 30 million daily records and reducing query response times by 33%, significantly improving operational efficiency.
- Constructed and maintained a clustered automated data processing pipeline for Content Disarm and Reconstruction (CDR) and format conversion, enhancing system security and ensuring reliable cross-platform data handling.
- Developed and implemented a social network analysis system to identify hidden relationships and communication patterns, supporting critical data-driven decisions across departments.

IT Technician (2014-2017) on Information Technology Team

- Led interactive onboarding and technical training sessions for 200+ employees, increasing digital adoption and reducing support tickets.
- Managed servers, virtual desktops, and containerized environments, ensuring high system uptime and strong data security controls.

National Defense University, Taipei, Taiwan

Sep. 2012 – Feb. 2014

Creative Director (2012-2014) of Visual Design Studio

- Directed a team of 10+ cadet designers to deliver visual design and event decoration for major institutional events, including anniversaries, memorial days, youth days and graduation ceremonies.
- Managed creative production across multiple venues (auditorium, training field, restaurant and campus spaces) and ensured high-quality execution under tight deadlines.
- Oversaw design and production of a wide range of creative assets including logos, honor badges, ID badges, posters, flyers, pamphlets, invitation cards, yearbooks and t-shirts, enhancing event visibility and community engagement.

Cadet Platoon Leader (2013-2014)

- Led physical training programs and instructed troops in operational procedures to enhance readiness.
- Supervised personnel accountability, ensuring discipline and adherence to protocols.
- Managed and coordinated administrative tasks, streamlining operations and reporting.

AWARDS

1st Place, Petchenik Memorial Graduate Award in Cartographic Design (2025)

2nd Place, Thematic Map Category, Wisconsin Land Information Association Map Contest (2025)

UW-Madison Champion & Student Representative, Big Ten Academic Alliance Data Viz Championship (2025)

CERTIFICATIONS

NGA Certificate, Intermediate GIS Analyst (2023) – Expertise in geospatial analysis and cartographic principles

Red Hat Certified Engineer (RHCE) (2019) – Linux system administration and automation

EDUCATION

University of Wisconsin Madison

Sept. 2024 – May 2026

M.S. in Cartography and GIS | GPA: 3.80/4.00

National Defense University (N.D.U.), Taipei, Taiwan

July 2010 – June 2014

B.A. in Information Management | GPA: 3.86/4.00 | Rank: 1st in the graduation class