

EUGENIE HUANG

Madison, WI (Open to relocation) | (608) 215-3573 | huang674@wisc.edu | <https://cat-grep.com>

Software and geospatial professional with 10+ years of experience developing data-driven applications, GIS workflows and production systems, with current research focused on LLM spatial reasoning and AI-assisted geospatial analysis. Combines Python/C# development, ArcGIS expertise, AI evaluation dataset development, software testing and troubleshooting, user-centered workflow design and cross-functional delivery. Experienced translating user needs into practical product improvements, automated workflows and reliable geospatial applications.

CORE CAPABILITIES

GeoAI & AI Evaluation: LLM Spatial Reasoning | Evaluation Dataset Development | Model Output Evaluation | Prompt/Workflow Testing

GIS & ArcGIS: ArcGIS Pro | ArcGIS Online | ArcGIS Maps SDK | ArcPy | QGIS | PyQGIS | Web GIS | Spatial Analysis

Software & Testing: Python | C# | JavaScript | SQL | REST APIs | Git | Automated Testing | Debugging | QA/QC | Docker | Linux

Product & UX: Requirements Gathering | User Research | Prototyping | Workflow Design | Technical Documentation | Cross-functional Collaboration | UI/UX

SELECTED GEOAI PROJECT

AI-Assisted Nuclear Siting Decision Support | *Graduate Capstone, In Progress* | 2026

- Designing an AI-assisted geospatial decision-support workflow that interprets natural-language siting questions, applies regulatory constraints and explains why candidate locations score as they do across 60+ spatial layers.
- Building interactive web mapping and Python-based analysis workflows for user-controlled weighting, spatial queries and transparent statewide-to-local siting exploration.

PROFESSIONAL EXPERIENCE

GeoDS Lab, University of Wisconsin-Madison | *Research Assistant* | May 2025 – Present

- Built a benchmark of 4,000+ geometry pairs to evaluate LLM spatial reasoning across topological and directional relationships, creating structured test data for identifying model strengths and failure patterns.
- Developed reproducible geospatial research workflows using ArcGIS Pro, ArcPy, Python and R, including privacy-preserving offline geocoding and spatial statistical analysis for statewide public-health research.

Wisconsin Nuclear Energy Siting Study | *Project Assistant* | Jan. 2026 – Present

- Coordinate geospatial data integration across PSC, ORNL, PNNL, WHS, WisDOT, WiDNR and other partners, consolidating 50+ environmental, regulatory, infrastructure and socioeconomic datasets for statewide siting analysis.
- Translate technical and stakeholder requirements into standardized screening workflows, map controls, visual outputs and an interactive geospatial decision-support platform.
- Increased preprocessing efficiency by 37% through reusable Python automation.

State Cartographer's Office, Madison, WI | *Project Manager* | Aug. 2025 – Sept. 2026

- Led end-to-end delivery of the WisDOT Right of Way Plats Georeferencing Project, translating agency requirements into technical workflows, QA/QC standards, testable deliverables and release priorities while mentoring up to seven interns.
- Increased production efficiency by 22% through ArcPy automation, documented validation procedures and repeatable QA workflows.
- Led recurring stakeholder discussions on status, risks, defects and delivery decisions.

GISPP Fellow | Sept. 2024 – July 2025

- Modernized public-facing GIS applications by migrating legacy tools to ArcGIS Online and rebuilding workflows with ArcGIS Maps SDK for JavaScript, improving maintainability, accessibility and usability.
- Reduced historical imagery retrieval time by 81% by automating USGS M2M data acquisition and processing with Python and ArcPy.

City of Round Rock, Round Rock, TX | [GIS Intern](#) | May – Aug. 2025

- Interviewed Water Resources, Fire Department and Emergency Management users to translate operational needs into GIS requirements, prototypes, test workflows and production deliverables.
- Implemented and validated ArcGIS Field Maps, Dashboards, Experience Builder and data-synchronization workflows supporting mobile, office and real-time operational use cases.

Sun-Net Cyber Inc., Taipei, Taiwan | *Senior Software Engineer*, Geospatial Team | 2022 – 2024

- Delivered and supported a production Web GIS platform providing 24/7 spatial situational awareness for government and healthcare users during the COVID-19 emergency response.
- Developed and maintained backend services, APIs, automated geolocation workflows and real-time monitoring capabilities supporting enterprise geospatial operations; increased maritime intelligence processing efficiency by 54%.

Project Manager and Senior Software Engineer, Artificial Intelligence Team | 2019 – 2022

- Led stakeholder engagement and technical delivery for AI-enabled operational applications, translating user needs into prioritized application changes, testing plans and production-ready improvements.
- Reduced critical threat response time by 27% through a real-time cybersecurity dashboard and automated alerting system, and increased customer workflow efficiency by 40% through user research, workflow analysis and iterative product improvements.

LC Networks Communication Inc., Taipei, Taiwan | *Junior Software Engineer / IT Technician* | 2014 – 2019

- Redesigned system architecture supporting 30 million daily records, reducing query response time by 33%, while developing and maintaining clustering Elasticsearch and SQL Server-backed applications and secure data-processing workflows.
- Maintained 99.9% production uptime across web, database, virtual server and containerized environments and led technical onboarding and training for 200+ employees.

ADDITIONAL GEOSPATIAL EXPERIENCE

Greenacre Law, San Diego, CA (Remote) | *Geospatial Consultant* | Mar. – Aug. 2026

- Built repeatable PostgreSQL/PostGIS and web-visualization workflows that translated spatial and temporal client patterns into decision-support insights for non-technical stakeholders.

Nature4Justice & Nature Focus, Remote | *GIS Consultant* | Jan. 2025 - May 2025

- Integrated cross-border geospatial datasets and performed site-suitability analysis for conservation and climate-resilience initiatives across the U.S., Canada and Mexico.

EDUCATION

University of Wisconsin-Madison

M.S. in Cartography and GIS | Anticipated Graduation: Dec. 2026 | GPA: 3.89/4.00

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

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

CERTIFICATIONS

- Project Management Engineer (PME), National Project Management Association (2013)
- NGA Certificate, Intermediate GIS Analyst (2023)
- Red Hat Certified Engineer (RHCE) (2019)

SELECTED AWARDS

- President's Choice & People's Choice, Wisconsin Land Information Association Map Contest (2026)
- Honorable Mention, CaGIS David Woodward Digital Map Award (2026)
- 1st Place, Petchenik Memorial Graduate Award in Cartographic Design (2025)
- UW-Madison Champion & Student Representative, Big Ten Academic Alliance Data Viz Championship (2025)