

PATRICK O'SHEA, M.S.

Geospatial Specialist

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FORMAL EDUCATION

M.S. Spatial Data Science

May 2025

Relevant Coursework: GIS Programming and Software Development, Web Application Development, Advanced Python Programming for GIS, Cartography and Visualization, Open Web Mapping, Geospatial Information Analysis, Geovisual Analytics, AI in Spatial Data Science, Environmental Challenges in Spatial Data Science

M.S. Hydrology

December 2018

Relevant Coursework: Applied Geographic Information Systems, Watershed Systems Modeling, Integrated Surface Water Hydrology

B.S. Double Major in Geography and Geology, Mathematics Minor

May 2015

Geography Departmental Honors, Earned GIS Certificate

Relevant Coursework: Introductory and intermediate GIS, Cartography, Remote Sensing of the Environment, Special Study in Geography

ADDITIONAL CERTIFICATIONS

Engineering Intern: Colorado, Certification number EI.0077541

Active Jan 2021 - Present

FAA Licensed Drone Pilot, Certification number 4774082

Active Jan 2023 - Present

SKILLS & PROFICIENCIES

Spatial Analysis – Data Management – Project Management – Publication & Report Writing – Collaboration – Data Visualization – Data Automation and Preparation – Spatial Statistics – Spatial Modeling – Remote Sensing – Drone Piloting – Cartography – Surveying – Topographic Map Interpretation – Web Development

ArcGIS Pro – ArcGIS Online – ArcMap 10.X – QGIS/GDAL – Leaflet – R – Python – HTML – Java Script – CSS – Git & Github

PROFESSIONAL EXPERIENCE

Student Contractor: Geospatial Web Developer

May 2024 - May 2025

USGS Web Informatics and Mapping Group (WIM) / Remote

- Added and improved functionalities within the StreamStats web application.
- Expanded the SPARROW nutrient web application for Tennessee.
- Creating a floodplain library near Midland, Michigan for the Flood Inundation Mapper web app.

DEVELOP Participant: NASA DEVELOP Program

August 2024 - April 2025

NASA Langley Research Center / Remote

- Worked with Sentinel and Landsat imagery to map flooding extents and land surface temperature.
- Produced a 2-D hydraulic model of flooding events along the Maipo River in Chile.
- Assisted in research efforts and creating our team's poster and technical report.
- Lead our urban heat team and acted as our main client contact.

Scientist

May 2023 - May 2024

Hazen and Sawyer, Inc. / Cleveland, Ohio

- Added new water infrastructure GIS data and created maps for the City of Cincinnati.
- Created custom python scripts for performing geospatial workflows.
- Created a story map to help the City of Hamilton plan building out their water infrastructure.

Water Resource Design Engineer II*February 2021– September 2022***Water Resources Designer***September 2019 – February 2021*

Galloway & Company, Inc. / Johnstown, Colorado

- Developed GIS standard operating procedures for the water resources team and produced various GIS derived deliverables both within the team and within the company in general.
- Utilized publicly available geospatial data to construct 1-D and 2-D hydraulic models in HEC-RAS.
- Delineated subbasins to define basin parameters for EPA SWMM hydrologic models.
- Constructed complex workmaps showing modifications to FEMA floodplains.

Engineering Technician*January 2019– September 2019*

City of Greeley / Greeley, Colorado

- Reviewed and provided comments on low to moderately complex civil engineering projects within the City of Greeley.
- Conducted site visits to certify the grades of new residential developments, and met with contractors regarding properties.
- Researched, tracked, and followed up on outstanding development agreements the city entered into.

Hydrology Pathways Intern*August 2017– December 2018*

USGS Colorado Water Science Center / Lakewood, Colorado

- Created a 3-D lithologic model to evaluate aquifer storage in the Wet Mountain Valley Aquifer.
- Contributed to the Water, Energy, and Biogeochemical Budgets (WEBB) program by preparing, collecting, and filtering water samples taken from the Loch Vale Watershed in Rocky Mountain National Park.
- Assisted in an array of surface and groundwater projects including the Fountain Creek Watershed Flood and Sediment Transport Study, acid mine drainage in the Sugarloaf Mining District, and NAWQA.

Planetary Geology and Geophysics Undergraduate Research Program*May 2015 – July 2015*

Southwest Research Institute / Boulder, Colorado

- Used Esri Suite to constrain the slope and aspect patterns of selected dune fields on the Martian southern hemisphere.
- Designed a custom methodology, conducted independent research, and communicated my progress at weekly meetings.
- Presented a poster of the project's results at the American Geophysical Union Conference (AGU) 2015.