

# ZACHERY PORTEOUS

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## **Education**

Humboldt State University

- Major: Environmental Science and Management with a focus in Geospatial Sciences, May 2020
- Minor: Computer Science

## **Geospatial Work Experience**

**Undergraduate Research Assistant** | Department of Environmental Science and Management | Humboldt State University | 2/2020 – Present

- Responsible for developing a cloud based geospatial data storage system for students and faculty to store their work and other common reference datasets

**GIS Research Assistant** | Cultural Resources Facility | Humboldt State University | 9/2019 - Present

- Was an integral part of the design and establishment of a permanent data storage solution that adapted the California Historical Resources Information System data model to a File Geodatabase
- Integrated a diverse range of data sources into a system that was maintainable, accurate and automated
- Built custom geoprocessing script tools within the ArcGIS Pro platform to expedite GIS and data entry workflows

**GIS Intern at National Park Service** | Redwood Parks Conservancy | 1/2019 – 8/2019

- Assisted the GIS coordinator in the development of a densified stream network within Redwood National and State Parks that was derived from LiDAR
- Collaborated with the state steward of the National Hydrography Dataset to input the park's new densified stream layer into the national database
- Became an official editor of the National Hydrography Dataset to facilitate the entry of the new high-resolution stream dataset

**GIS Instructional Student Aid** | Humboldt State University | 2/2019-12/2019

- Assisted students in preparing for and completing their GIS coursework ranging from beginning geospatial courses to advanced geospatial programming with Python, JavaScript, and SQL

## **Leadership**

**GIS Club President** | Humboldt State University | 2/2019 – 12/2019

- Organized bi-weekly meetings of students interested in learning more about geospatial sciences
- Planned and hosted the Spring 2019 GIS Day Event at Humboldt State University

## **Research and Projects**

- “Automating Raster Processing with the Rasterio and QT Modules” – Developed a script that processed level one Landsat 8 imagery to top of atmosphere reflectance, and allowed a user to choose from 10 different vegetation indices to calculate within a GUI made in the QT module, HSU Spring 2019

- “UAV Photogrammetry for Surveying Dune Habitats: A Review of Research Needs of the Friends of the Dunes Land Trust” – Used Agisoft Structure from Motion techniques with UAV photography to measure the morphology of dune crests on the California Coast, HSU Fall 2018
- “Choosing Optimal Sites for New Electric Vehicle Charging Stations in Humboldt County” – Suggested new sites in Humboldt county based on the existing service shed of charging stations derived from network analysis, HSU Fall 2018
- “Land Cover Change Detection in California’s Coastal Dunes Using the Random Forest Classification Algorithm” – Used NAIP imagery and the R programming language to classify a small area of Dunes on the California Coast, HSU, Fall 2018

## **Skills & Abilities**

### **GIS + Remote Sensing**

- Proficient with ArcGIS for Desktop, ArcGIS Pro and ENVI software
- Knowledge of LiDAR processing and Feature Extraction using ArcGIS Pro
- Scripting with Python, experience using various Python modules such as ArcPy and Rasterio to automate the manipulation of geospatial data
- Familiarity with the conversion of CAD data to GIS systems

### **Computer Science**

- Experience with designing and implementing relational databases with SQL + PL/SQL using Oracle and Postgresql
- Familiar with front end web development in HTML5, CSS3, and JavaScript
- Extensive experience automating simple and complex data management tasks with Python and several of its native and non-native modules
- Currently exploring web development with the Django web framework

## **References**

**Jim Graham, Ph.D.**

**Associate Professor at Humboldt State University**

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**Jeremy McFarland**

**GIS Manager at Cultural Resources Facility**

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**David Best**

**GIS Coordinator at Redwood National and State Parks**

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**Judy Wartella**

**GIS Specialist at Redwood National and State Parks**

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