

# JACOB ORSER

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## SKILLS

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### GIS/RS Software

Proficiency with Esri ArcGIS Suite, Google Earth Engine, QGIS  
Experience with ERDAS Imagine, Agisoft Metashape, Pix4DMapper

### Programming Languages

Experience with RStudio, Python, JavaScript, Stata, SQL

### Passionate About

Land Use and Land Change, Economic Development, GIS and RS, Natural Resources and Agriculture, Environmental Justice, Urban Planning and Housing, and Community Engagement.

## EDUCATION

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### Macalester College. St. Paul, MN GPA: 3.5

B.A. May 2023

Major: Geography, Minor: Economics, Concentration: Food, Agriculture, and the Environment

## COURSE PROJECTS

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### Cobalt Mining in the Democratic Republic of the Congo

*Remote Sensing and GIS Project*

- Ran an OLS model with raster and vector data to quantify inter and intra-temporal trends. Performed a classification analysis to identify land cover change trends across 20 years.

### Wolf & Beaver Activity: The Role of Forage and Predation

*Remote Sensing and Ecology Project*

- Ran a Random Forest model in R to classify forest types in Minnesota. Collaborated with a multidisciplinary cohort, and published the results.

### Environmental Impact Assessment of Line 3

*Remote Sensing Project*

- Modeled change in NDVI due to construction of the line 3 oil pipeline, and evaluated effect. Received 2nd place at the Minnesota GIS/LIS conference.

### Flooding Impacts in Pakistan

*Econometrics Project*

- Modeled the impacts of the 2022 flood event, deriving acreage and yield loss, and predicted local prices.

### National Price Impacts on Local Farmers

*Econometrics and Remote Sensing Project*

- Using NDVI for quantity and national price data, estimated the elasticity of supply, and farmer's indifference curves, and identified patterns across space and time.

## LEADERSHIP

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### Student Mentor. Bloomington Public Schools.

*January 2020 - May 2022*

- Mentored 40 middle school students to develop their leadership skills.

## WORK EXPERIENCE

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### Solution Engineer. Esri

*June 2023 - September 2023*

- Gained proficiency in utilizing the Esri ArcGIS suite. Acquired knowledge and experience in database management, including creating and deploying multiuser geodatabases and ArcGIS Enterprise, a cloud-based database management system.
- Collaborated with fourteen customers to address their inquiries and provide effective solutions. Working within a team environment where I actively contributed to problem-solving efforts.
- Developed and presented a customer-facing website that emphasized citizen engagement and education, delivering presentations both to customers and internally.

### Teaching Assistant. Macalester College

*September 2022 - May 2023*

- Assisted twelve students with projects and questions relating to remote sensing and data science technology, workflows, and theory.
- Helped articulate the importance of communicating data-driven analytics effectively.
- Developed labs highlighting remote sensing theory and machine learning algorithms.

### Geospatial Analyst. Sentera

*May 2022 - September 2022*

- Leveraged GIS and agricultural knowledge to automate drone stitching workflows, delivering directly to over two hundred customers.
- Adapted custom software and evolving workflows supporting plant and weed detection QA.
- Developed code to update internal workflows to comply with Python code and standard documentation.

### DEVELOP National Program Fellow. NASA

*January 2022 - May 2022*

- Communicated weekly with partners to develop and build a user-friendly interactive GUI highlighting Lymantria dispar's effects.
- Utilized satellite imagery, spatial data, and harmonic models to develop a machine-learning algorithm to detect and predict predation patterns.
- Presented findings to five community partners, including regional, state, and local government organizations.