

# Alexander C. Michels

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## 🎓 Education

### Ph.D. in Spatial Informatics

June 2019 - Present

University of Illinois at Urbana-Champaign

– Advised by Dr. Shaowen Wang

### M.S. in Geography and G.I.S.

August 2020 - Present

University of Illinois at Urbana-Champaign

### B.S. in Mathematics and Financial Economics

August 2015 - May 2019

Westminster College

– Minor in Computer Science — Honors in Computer Science and Math — Graduated Cum Laude

## 👛 Experience

### CyberGIS and CyberInfrastructure Researcher

📍 Champaign, IL

[CyberGIS Center](#) and [CyberInfrastructure](#) & [Geospatial Information Laboratory \(CIGI\)](#)

June 2019-Present

- Lead development of multiple cyberinfrastructure projects including a Hadoop cluster and [CyberGISX/CJW](#).
- Developed and published multiple spatial models for educational and research purposes.

### Data Scientist and Informatics Researcher

📍 Los Angeles, CA

[Institute for Pure and Applied Mathematics at UCLA](#) & [Praedicat, Inc.](#)

June 2018 -August 2018

- Worked for Praedicat, Inc. automating information extraction, classification, and aggregation from web data for business profiling of over 52,600 companies and corporate entities.
- Worked for IPAM to develop a novel algorithm for computational fact-checking on knowledge graphs and a self-supervised machine learning algorithm for sentence importance which outperformed TF-IDF.

### Systems Administrator and Software Engineer

📍 New Wilmington, PA

[Titan Radio](#) and [WCN 24/7](#)

May 2018 - May 2019

- Responsible for the technology and infrastructure required to keep the radio and television station operating.

### Information Technology Intern

📍 New Castle, PA

[Treloar & Heisel](#)

September 2018 - December 2018

- Maintained databases and wrote applications for company use in Java, Python, and Visual Basic.

## ⚙️ Skills

🔧 **Data Science:** Big Data, G.I.S., Git, Machine Learning, Parallel Programming, Network Science

🔗 **Languages:** Python (& Cython), Bash, C++, Java, R

📦 **Technologies:** Docker, Hadoop (HDFS/Spark/Yarn), Kubernetes, OpenStack, Terraform

💻 **Operating Systems:** Linux (esp. Mint & Ubuntu), Windows

## 🔗 Projects

### CyberGISX/CyberGIS-Jupyter for Water (CJW)

🔗 <https://cybergisxhub.cigi.illinois.edu/>

- Platform for reproducible spatial data science using JupyterHub on DockerSwarm and Kubernetes
- Redesigned [CJW to use modules for software management](#) and developed a version using K8s on Openstack integrated with Hydroshare: <http://go.illinois.edu/cjw-k8s>

### WhereCOVID-19

🔗 <https://wherecovid19.cigi.illinois.edu/>

- Dashboard for displaying up-to-date COVID-19 statistics.
- Wrote the pipeline to calculate spatial accessibility to medical resources. DOI: [10.1186/s12942-020-00229-x](https://doi.org/10.1186/s12942-020-00229-x)