

# Alexander C. Michels

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🌐 [alexandermichels.github.io](https://alexandermichels.github.io)  
🔗 [github.com/alexandermichels](https://github.com/alexandermichels)

## 🎓 Education

### University of Illinois at Urbana-Champaign

*Ph.D. in Informatics*

- Pursuing the Spatial Informatics concentration under Dr. Shaowen Wang

📍 Champaign, IL

*June 2019-Present*

### Westminster College

*Bachelor of Science in Mathematics and Financial Economics*

- Honors Thesis: “Capturing the Predictive Power of Cortical Learning Algorithms”
- Minor in Computer Science — Graduated Cum Laude — Honors in Computer Science and Math — 3.7 GPA

📍 New Wilmington, PA

*August 2015 - May 2019*

## 👛 Experience

### CyberGIS and CyberInfrastructure Researcher

*CyberGIS Center and CyberInfrastructure & Geospatial Information Laboratory (CIGI)*

📍 Champaign, IL

*June 2019-Present*

- Building cyberinfrastructure using Docker Swarm, Hadoop and Kubernetes clusters. I manage an undergraduate research assistant and maintain the development branch of [CyberGIS-Jupyter](#)
- Programming spatially-explicit models for disease and land-use change

### Data Scientist and Informatics Researcher

*Institute for Pure and Applied Mathematics at UCLA & Praedicat, Inc.*

📍 Los Angeles, CA

*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

*Titan Radio and WCN 24/7*

📍 New Wilmington, PA

*May 2018 - May 2019*

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

### Information Technology Intern

*Treloar & Heisel*

📍 New Castle, PA

*September 2018 - December 2018*

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

### Computational Finance Research Assistant

*Dr. Charles Shaffer*

📍 New Wilmington, PA

*January 2017 - May 2018*

- Integrated cryptocurrency trading into Dr. Shaffer’s algorithmic currency trading application.

## 🔗 Projects

### CyberGIS-Jupyter

🔗 [Link: https://cybergis.illinois.edu/project/cybergis-jupyter/](https://cybergis.illinois.edu/project/cybergis-jupyter/)

- Platform for reproducible spatial data science using JupyterHub on DockerSwarm and Kubernetes
- Responsible for development using K8s on Openstack.

### Where COVID-19

🔗 [Link: https://wherecovid19.cigi.illinois.edu/](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)

### MintSetup

🔗 [Repo: https://github.com/alexandermichels/MintSetup](https://github.com/alexandermichels/MintSetup)

- Python application with PyQt5 GUI that produces Bash scripts
- Allows users to produce customized Bash scripts for installing applications and removing pre-installed software

## ⚙️ Skills

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

🔗 **Languages:** Python (& Cython), Java, C++, Bash, R, HTML, CSS, XML, Javascript

🔧 **Technologies:** Ansible, Docker (Swarm), Hadoop (HDFS/Spark/Yarn), Kubernetes

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