

Alexander C. Michels

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🔗 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