

Alexander C. Michels

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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

Geographic Information Science Researcher

CyberGIS Center and CyberInfrastructure & Geospatial Information Laboratory (CIGI)

- Conducting spatial informatics research under Dr. Shaowen Wang.
- Primarily working in Algorithms and Systems, building and maintaining the cyberinfrastructure and programming solutions to computational problems.

Champaign, IL

June 2019-Present

Informatics Researcher

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

- 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.

Los Angeles, CA

June 2018 - August 2018

Systems Administrator and Software Engineer

Titan Radio and WCN 24/7

- Responsible for the servers, streams, VMs, and other technology that keeps the Broadcasting Department including radio and television station operating.

New Wilmington, PA

May 2018 - May 2019

Information Technology Intern

Treloar & Heisel

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

New Castle, PA

September 2018 - December 2018

Teaching Assistant and Tutor

Westminster College

- Assisted professors in grading, working with students individually, and developing curriculum for classes covering coursework in Calculus, Computer Science, and Operations Research.

New Wilmington, PA

August 2015 - December 2018

Computational Finance Research Assistant

Dr. Charles Shaffer

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

New Wilmington, PA

January 2017 - May 2018

Papers

- [1] A. C. Michels, “Capturing the predictive power of cortical learning algorithms,” May 2019. Bachelor’s thesis.
- [2] H. Ahuja and A. C. Michels, “Computational fact-checking through relational similarity based path mining,” Jan 2019. AMS Contributed Paper Session at the 2019 Joint Mathematics Meeting.
- [3] H. Ahuja, A. C. Michels, and L. Shi, “Information extraction and aggregation from unstructured web data for business profiling,” tech. rep., Institute for Pure and Applied Mathematics and Praedicat, Inc., Los Angeles, California, Aug 2018.

Selected Presentations

“Capturing the Predictive Power of Cortical Learning Algorithms”

National Conference on Undergraduate Research

April 2019

♥ Atlanta, GA

“Computational Fact-Checking through Knowledge Graphs”

AMS Contributed Paper Session at 2019 Joint Mathematics Meeting

January 2019

♥ Baltimore, MD

“Information Extraction and Aggregation for Business Profiling”

Invited Talk at Praedicat, Inc.

August 2018

♥ Los Angeles, CA

“Information Extraction and Aggregation for Business Profiling”

Invited Talk at Institute for Pure and Applied Mathematics

July 2018

♥ Los Angeles, CA

“Decentralizing the World with Blockchain”

Undergraduate Research & Arts Celebration

April 2018

♥ New Wilmington, PA

“Repeated Play Games”

MAA, Allegheny Mountain Section Meeting

April 2017

♥ Pittsburgh, PA

“Strategies in Simulated Repeated Play Game Theory”

Undergraduate Research & Arts Celebration

April 2017

♥ New Wilmington, PA

“Optimizing Throughput, Cost, and Safety in Toll Booth Plazas”

Pi Mu Epsilon Regional Conference

February 2017

♥ Youngstown, OH

Awards

Best Robot in Division Prize for Senior Unique Division

“Robot in the Division with the lowest Total Final Scores”

April 2018

Trinity Fire Fighting Robot Contest

North America Award for Level 2

“The top North American robot in Level 2”

April 2018

Trinity Fire Fighting Robot Contest

Dr. Thomas R. Nealeigh Mathematics Scholarship

“awarded to an outstanding junior or senior mathematics major”

March 2018

Westminster College

Paul E. Brown Memorial Scholarship

“given based on merit and academic achievement”

March 2017

Westminster College

Honorable Mention

“excellent modeling and sensitivity analysis”

January 2017

COMAP International Mathematical Modeling Competition

Mathematics Book Award

“presented to the sophomore Mathematics major with the highest GPA”

March 2017

Westminster College