

# William Theisen

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## Education

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### University of Notre Dame

PH.D. IN COMPUTER SCIENCE

- **Advisor:** Dr. Walter Scheirer

Notre Dame, IN

April 2024

### University of Notre Dame

M.S. IN COMPUTER SCIENCE

- **Advisor:** Dr. Walter Scheirer

Notre Dame, IN

June 2022

### University of Notre Dame

B.S. IN COMPUTER SCIENCE

Notre Dame, IN

May 2018

## Teaching Experience

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### University of Notre Dame

INSTRUCTOR OF RECORD - INTRODUCTION TO ARTIFICIAL INTELLIGENCE: COURSE WEBSITE - 90 STUDENTS

- Received a feedback score of \* / 5.
- Redid course materials and structure from scratch

Notre Dame, IN

Fall 2024

### University of Notre Dame

INSTRUCTOR OF RECORD - PROGRAMMING CHALLENGES: COURSE WEBSITE - 43 STUDENTS

- Received a feedback score of \* / 5.

Notre Dame, IN

Fall 2024

### University of Notre Dame

INSTRUCTOR OF RECORD - PROGRAMMING CHALLENGES: COURSE WEBSITE - 63 STUDENTS

- Received a feedback score of 5 / 5.

Notre Dame, IN

Fall 2023

### University of Notre Dame

CO-LEAD - DEI SUMMER SEMINAR PROGRAM

- Co-lecturer for a summer seminar series on problem solving.
- Helped develop curriculum for promoting equity amongst underserved students in the department.

Notre Dame, IN

Summer 2023

### University of Notre Dame

INSTRUCTOR OF RECORD - PROGRAMMING PARADIGMS: COURSE WEBSITE - 53 STUDENTS

- Redesigned curriculum and course materials from scratch.
- Received a feedback score of 4.6 / 5 as a first time instructor.

Notre Dame, IN

Spring 2023

### University of Notre Dame

GRADUATE TEACHING ASSISTANT

- Fall Semester: Operating System Principles
- Spring Semester: Computer Security

South Bend, IN

Fall 2018, Spring 2019

### University of Notre Dame

UNDERGRADUATE TEACHING ASSISTANT

- Fall Semester: Operating System Principles
- Spring Semester: Systems Programming

South Bend, IN

Fall 2017, Spring 2018

### University of Notre Dame

UNDERGRADUATE TEACHING ASSISTANT

- Spring Semester: Systems Programming

South Bend, IN

Spring 2017

## Academic - Other

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## University of Notre Dame

Notre Dame, IN

### SUBMITTED IRB

Fall 2024

- In conjunction with professor in Mendoza - ITAO submitted an IRB to perform a study about the possibility of using ChatGPT systems as a provisional auto-grader in several programming heavy classes.
- Targeting submission to SIGCSE 2026 in July 2025.

## University of Indiana - Pennsylvania

Indiana, PA

### COURSE MATERIALS USED AT OTHER UNIVERSITY.

Fall 2024

- Course materials from CSE 30872 - Programming Challenges used to help competitive programming team practice

## University of Notre Dame

Notre Dame, IN

### BUILDING BRIDGES MENTOR

Fall 2024

- Served as mentor for first-year student interested in Computer Science from a historically underrepresented background

## University of Notre Dame

Notre Dame, IN

### ELECTIVE CLEANUP COMMITTEE

Fall 2024

- Served as a member of the elective cleanup committee, tasked with identifying and improving elective offerings in the computer science department.

## University of Notre Dame

Notre Dame, IN

### CLUB SPORTS VOLUNTEER COACH

Fall 2024

- Served as a volunteer coach for the University of Notre Dame's Ultimate Frisbee Club consisting of over 100 students, several of which are majoring in computer science.
- Time spent was approximately 8+ hours a week on an average week and more when tournament and game travel was required.

## University of Notre Dame

Notre Dame, IN

### PROFESSIONAL DEVELOPMENT

Fall 2024

- Attended the Kaneb Center's pre-semester teaching workshop for new faculty.

## University of Notre Dame

Notre Dame, IN

### PROFESSIONAL DEVELOPMENT

Fall 2024

- Engaged with the Kaneb Center to have lecture reviews done beyond the departmental standard internal peer evaluation.

## Publications

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Patrick Gerard, **William Theisen**, Tim Weninger, Kristina Lerman. "Fear and Loathing on the Frontline: Decoding the Language of Othering by Russia-Ukraine War Bloggers" Submitted, 2024

**William Theisen**. "Motif Mining: Towards Multimodal Retrieval for Discovering Disinformation Trends in Social Media" Dissertation, 2024

**William Theisen** and Walter Scheirer. "N-Modal Contrastive Losses With Application to Social Media Data in Trimodal Space" Submitted WACV '25, N/A, 2024

**William Theisen** and Walter Scheirer. "C-CLIP: Contrastive Image-Text Encoders to Close the Descriptive-Commentative Gap" Accepted WACV '24, <https://arxiv.org/pdf/2309.03921.pdf>, 2023

**William Theisen**, Michael Yankoski, Kristina Hook, Tim Weninger, Walter Scheirer, and Ernesto Verdeja. "An Avalanche of Images on Telegram Preceded Russia's Full-Scale Invasion of Ukraine" Submitted, 2024

**William Theisen**, Daniel Gonzalez Cedre, Zachariah Carmichael, Daniel Moreira, Tim Weninger, Walter Scheirer. "Motif Mining: Finding and Summarizing Remixed Image Content" in Winter Conference on Applications of Computer Vision (WACV), 2023

Daniel Moreira, **William Theisen**, Walter Scheirer, Aparna Bharati, Joel Brogan, Anderson Rocha. "Image Provenance Analysis" in Multimedia Forensics from Springer Nature (389-432), 2022

Michael Yankoski, **William Theisen**, Ernesto Verdeja, and Walter Scheirer. "Artificial Intelligence for Peace: An Early Warning System for Mass Violence" in Towards an International Political Economy of Artificial Intelligence (147-175), 2021.

Trenton W Ford, Michael Yankoski, **William Theisen**, Tom Henry, Farah Khashman, Katherine R Dearstyne, Tim Weninger. "MEWS: Real-time Social Media Manipulation Detection and Analysis" in Proceedings of Machine Learning Research: NeurIPS 2021 Competition and Demonstration Track (NeurIPS), 2021

**William Theisen**, Joel Brogan, Pamela Biló Thomas, Daniel Moreira, Pascal Phoa, Timothy Weninger, and Walter Scheirer. "Automatic Discovery of Meme Genres with Diverse Appearances" in Proceedings of the AAAI International Conference on Web and Social Media (ICWSM), 2020.

## Invited Talks

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### Invited Presentation

*Kona, Hawaii*

WACV 2024

*January 2024*

- Presented our publication 'C-CLIP: Contrastive Image-Text Encoders to Close the Descriptive-Commentative Gap' at the conference to which it was accepted.

### Invited Presentation

*Kona, Hawaii*

WACV 2023

*January 2023*

- Presented our publication 'Motif Mining: Finding and Summarizing Remixed Image Content' at the conference to which it was accepted.

### Invited Presentation

*Virtual Presentation*

THE TURING INSTITUTE

*February 2023*

- Presented our work on the Misinformation Early Warning System (MEWS) project.

### Invited Presentation

*Bethlehem, Pennsylvania*

LEHIGH UNIVERSITY

*April 2021*

- Guest lecturer for an Image Forensics class at Lehigh University.

### Invited Presentation

*Virtual Conference*

ICWSM 2021

*May 2021*

- Presented our publication 'Automatic Discovery of Political Meme Genres with Diverse Appearances' at the conference to which it was accepted.

### Invited Presentation

*Notre Dame, IN*

UNIVERSITY OF NOTRE DAME

*November 2019*

- Guest lecturer for a Tech Ethics class at Notre Dame presenting on Modern Propaganda.

## Recognitions

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### Outstanding Graduate Student Teacher

*Notre Dame, IN*

UNIVERSITY OF NOTRE DAME (KANEH CENTER)

*April 4th, 2024*

- Received the Kaneh Center award for outstanding graduate student teacher in the department of computer science and engineering

## Reviews

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**WACV** 2023, 2024

**ICWSM** 2022, 2023, 2024

**TKDE** 2023

**T-IFS** 2023

**ASONAM** 2023

## Professional Experience

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### University of Notre Dame

*Notre Dame, IN*

GRADUATE RESEARCH ASSISTANT

*June 2018 - May 2024*

- Improved image retrieval for the task of aiding watch-dog organizations combat misinformation abroad.
- Developed the MEWS pipeline to provide a front-end of our research to non-technical partners.
- Worked with our partners at Red Hat Research to develop and improve tools for detecting manipulated images.

### Red Hat Software

*Boston, MA (Remote)*

RESEARCH INTERN

*June 2022 - August 2022*

- Created a demo for a microservices-based pipeline for online misinformation detection

### Nyhart Consulting

*Indianapolis, IN*

SOFTWARE ENGINEERING INTERN

*May 2017 - August 2017*

- Developed a front-end tool to aid actuaries interfacing with a database.