# Nicholas R. Hamilton

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## EDUCATION

**Michigan Technological University, Houghton, MI**      **January 2020 - Present**
**Ph.D., Computer Science**      **Expected Graduation: May 2024**
GPA: 4.00

**Michigan Technological University, Houghton, MI**      **January 2020 - Present**
**M.S., Computer Science**      **Expected Graduation: December 2022**
GPA: 4.00

**Michigan Technological University, Houghton, MI**      **September 2016 - December 2019**
**B.S., Computer Science**
**Minor, Mathematical Sciences**
Department GPA: 4.00
Cumulative GPA: 3.78

Recipient of seven Dean's List honors, member of Upsilon Pi Epsilon honor society

## PUBLICATIONS

Hamilton, N., Webb, A., DeKraker, Z., Hendrickson, B., Blank, M., Nelson, E., Roemer, W., and Havens, T. C., "Augmentation methods for object detection in overhead imagery," (2021).

Hamilton, N., Webb, A., Wilder, M., Hendrickson, B., Blank, M., Nelson, E., Roemer, W., and Havens, T. C., "Enhancing visualization and explainability of computer vision models with local interpretable model-agnostic explanations (LIME)," (2022). Manuscript submitted for publication.

Hamilton, N., Webb, A., Wilder, M., Hendrickson, B., Blank, M., Nelson, E., Roemer, W., and Havens, T. C., "Augmentation methods for object detection in overhead infrared imagery," (2022). Manuscript in preparation.

## WORK EXPERIENCE

**Graduate Research Assistant**      **May 2020 - Present**
Michigan Technological University, Houghton, MI
- Focusing on machine learning and computer vision
- Researching augmentation methods for object detection

**Graduate Teaching Assistant**      **December 2019 - May 2020**
Michigan Technological University, Houghton, MI
- Graded student work in multiple courses
- Proctored in-person and online exams

**Full Stack Developer Intern**                                    **May 2019 - September 2019**
IBM, Rochester, MN
- Worked in Agile, collaborative environment with daily Scrum meetings
- Developed significant portion of tool for migrating customers to IBM's latest version of WebSphere

**Computer Science Learning Center Coach**              **September 2018 - April 2019**
Michigan Technological University, Houghton, MI
- Taught students material from various courses including discrete math, data structures, graphics, Java, and C
- Assisted students with homework and studying for exams

**Computer Science Lab Teaching Assistant**            **September 2017 - December 2017**
Michigan Technological University, Houghton, MI
- Helped students learn C in a lab environment
- Graded assignments and exams

**Registrar Assistant**                                            **September 2016 - May 2017**
Michigan Technological University, Houghton, MI
- Assisted with clerical duties
- Handled confidential documents

## COMPUTER SKILLS

Proficient in software design and development, Linux, concurrent computing, and databases.

**Languages and Libraries**
- C
- C++
- Java
- JS
- Python
- C#
- x86
- MySQL
- HTML
- OpenGL
- OpenAL
- SDL2
- GLFW
- NumPy
- Keras
- Node.js
- jQuery
- Unity3D

## PROJECTS AND RELATED EXPERIENCE

**Personal Projects**                                              **January 2007 - Present**
15 years of C, C++, and Java for work with projects including:
- Machine learning including optical character recognition, computer vision, text generation, and deep learning
- Physics simulations including 2D rigid body physics and 3D gravity simulations
- Procedural generation including texture generation and terrain generation

**Husky Game Development Enterprise**                   **January 2017 - December 2018**
Michigan Technological University, Houghton, MI
- Developed cross platform 3D game engine using Java and OpenGL
- Used GitHub, Slack, Taiga, and Google services for team communication
- Collaborated using Scrum and Agile development processes