

# Jason Miles

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## EDUCATION

<b>University of Notre Dame</b>	Notre Dame, IN
Bachelor of Science, Major: Computer Science	May 2021
Minor: Philosophy	GPA: 3.39

## RESEARCH

<b>Quantum Computing Lab, Dr. Kamal Saha</b>	Notre Dame, IN
<i>Undergraduate Research Intern</i>	Winter 2020 – Spring 2021
<ul style="list-style-type: none"><li>• Researched ways to optimize the Variational Quantum Eigensolver algorithm to aid the study of molecular electronic structure</li><li>• Participated in Qiskit training course, learning other algorithms in the process such as Quantum Fourier Transform</li></ul>	

## CODING PROJECTS

<b>Natural Language Processing</b>	Notre Dame, IN
<i>Sentiment Translation Project</i>	Spring 2021
<ul style="list-style-type: none"><li>• Researched methods for translating negative sentiment statements into positive sentiment, limited by non-parallel data</li><li>• Built system that used an encoder, decoder, and classifier to translate a statement multiple times into same and opposite sentiments. Calculated loss from both reconstruction and classification</li></ul>	

<b>AI and Social Good</b>	Notre Dame, IN
<i>COVID-19 Impact Prediction Project, Team Member</i>	Fall 2020

- Project goal was to investigate data from Notre Dame's Global Adaptation Initiative (ND-GAIN) to find any correlation with Covid cases and deaths. ND-GAIN rated cities around the U.S. on both vulnerability to and readiness for natural disasters
- Responsible for processing data as well as guiding project scope and direction

<b>Databases</b>	Notre Dame, IN
<i>Web Application Project, Team Member</i>	Fall 2019

- Developed a web application in Databases course using Bootstrap, JavaScript and Flask which connects to a SQL database.
- Focused on creating a solution for generating more interest in Notre Dame athletics and designed an app that makes the athletic experience more social, with functionality that enables users to interact with each other in exciting ways.

<b>Systems Programming</b>	Notre Dame, IN
<i>HTTP Client/Server Project, Team Member</i>	Spring 2019

- Developed a basic HTTP server in C using low-level system calls related to sockets and networking. The server supports directory listings, static files, and CGI scripts.
- Developed a basic HTTP client in Python that was used to test the server by making multiple requests using multiprocessing.

<b>Data Structures</b>	Notre Dame, IN
<i>Pharmacy Simulator Project, Team Member</i>	Spring 2019

- Worked with a team to develop a pharmacy simulator in order to stock shelves, conduct inventory, fill prescriptions, and proactively inspect medications prior to expiration in accordance with the Institute of Safe Medication Practice Standards
- Developed a technical document to effectively communicate to new users the process of creating a Git account for version control for project management

## CAMPUS ENGAGEMENT

<b>South Bend Code School</b>	South Bend, IN
<i>Coding Instructor</i>	January 2019 – January 2021

- Programming instructor at a local code school, providing group and 1 on 1 instruction for children ages 7-18
- Taught a virtual Python class for high school students during Fall 2020
- Fostered the growth of young students while supervising their projects in Python, Web Development and Scratch

<b>Cryptography</b>	Notre Dame, IN
<i>Undergraduate Teaching Assistant</i>	Fall 2020

- Teaching Assistant for CSE 40622 Cryptography
- Responsible for holding virtual office hours

<b>Theory of Computing</b>	Notre Dame, IN
<i>Undergraduate Teaching Assistant</i>	Spring 2020

- Teaching Assistant for the Theory of Computing course offered by the Notre Dame Silicon Valley program
- Responsibilities include grading and holding virtual office hours

<b>Compton Family Ice Arena</b>	Notre Dame, IN
<i>Operations Assistant/Hockey Class Instructor</i>	Fall 2018 – Spring 2020

- Enhanced team efficiency of overseeing rink operations on Notre Dame Hockey game days

## TECHNICAL SKILLS AND INTERESTS

Technical: Python, C, C++, JavaScript, Java, Qiskit, PyTorch, SQL, MATLAB, Git

Interests/other coursework: AI, Blockchain, Philosophy of Physics, Technology and Human Persons, Dillon Hall Interhall Hockey