



CONTACT



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721 N 1st Street Unit C
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EDUCATION

M.S. MECHANICAL ENGINEERING

Northern Illinois University
August 2019
GPA 3.9

B.S. PHYSICS

Beloit College
May 2017
GPA 3.9
Course work in Data Structures
and Algorithms / OO Programming

SKILLS

JAVA	<div><div></div></div>
PYTHON	<div><div></div></div>
UNIX / LINUX	<div><div></div></div>
MATLAB	<div><div></div></div>
HTML, CSS, JS	<div><div></div></div>
GIT	<div><div></div></div>
LabVIEW	<div><div></div></div>
SQL	<div><div></div></div>
TCL	<div><div></div></div>
LAMMPS	<div><div></div></div>
VMD	<div><div></div></div>
MS Office	<div><div></div></div>

Mary Elizabeth Breen-Lyles

PROGRAMMER - ENGINEER - RESEARCHER

SUMMARY

Fast-learning, critically-thinking, methodical worker with substantial coding/software experience from a wide breadth of engineering and research applications. Maintains strong mathematical aptitude and passion for problem-solving. Always a tenacious team member willing to put in the necessary work to rigorously learn on the job and doggedly pursue project goals.

PROJECTS

MindMap - Web Application (2019)

- Full stack development to create a web application for intuitively taking and organizing notes
- Used Python and Flask, MariaDB (SQL), Jinja, HTML, CSS, Javascript, and ReactJS for UI design
- Best practices: PipEnv (dependency management), GitHub (version control), and Flyway (database migrations)

Daily Coding Problems - Algorithms and Data Structures (2019)

- Worked on daily coding problems for 2 hours a day in both Java and Python

Panic at the Crisco - Cross Platform Video Game (2018)

- Participated in a 48 hour game jam and built a video game for Windows, Mac, and Linux in a team of two
- Learned about event driven programming, graphics, and crafting user experience

WORK EXPERIENCE

2018

Graduate Research Assistant, Northern Illinois University DeKalb, IL (January 2018 - present)

- Executed dynamic molecular computations across distributed systems
- Worked with Tcl Scripting and Python to analyze output data
- Used MAKE to compile LAMMPS from C++ source code
- Utilized Unix/ Linux as both my development and runtime environment. Interacted extensively with a remote Linux HPC cluster

2017

Research Assistant, Beloit College Beloit, WI (August 2016 - May 2017)

- Repaired handmade proton accelerator via machining and configurational planning for new/existing instrumentation
- Extensive work on electromagnet (cooling system, Faraday cup implementation, electrical load and bending angle calculations)
- Tuned magnet based on initial predictions and later testing. Used MATLAB, thermal imaging, and thermocouple, voltmeter, ammeter data for analysis

2016

Undergraduate Research Fellow, Georgia Southern University Statesboro, GA (June 2016 - August 2016)

- Wrote programs in LabVIEW to pass data from sensors on a diesel engine to computers
- Developed LabVIEW programs for pressure transducers, accelerometers, and flow meters on a jet turbine engine
- Gained substantial experience in sensor calibration, instrumentation, advanced data acquisition and programming

2015

Sustainability Fellow, Beloit College Beloit, WI (September 2015 - May 2016)

- Wrote program to compute thermodynamic properties of new campus building
- Developed in-depth model using thermal FEA to predict HVAC needs
- Presented at 2016 Student Symposium and to Beloit College Board of Trustees