



## CONTACT



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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

## HONORS

### Co-author of ASME Publication (2017)

Performance of Supercharged Engine Fueled with  
CTI Binary Mixture at Dierent Injection Pressures

### Walter S. Haven Physics Prize (2017)

Granted in honor of excellent work with the Physics  
Department's accelerator.

### Departmental Honors (awarded May 2017)

Awarded by Physics Dept of Beloit College

### Phi Beta Kappa Member (inducted May 2017)

Oldest and one of the most prestigious academic  
honor societies in the US

### Presidential Scholarship (2014-2017)

Beloit College's prestigious honor awarded for  
exceptional academic achievement.

### Dean's List (2014-2017)

## SKILLS

VS Code	MATLAB
Eclipse	Java
Adobe Illustrator	Python
Postman	Unix / Linux
ElasticSearch	Tcl
Redis	HTML, CSS, JS
Consuming REST APIs	Git
Regular Expressions	Celery
Project Estimation	jQuery
Client Communication	PHP

# Mary Elizabeth Breen-Lyles

PROGRAMMER - ENGINEER - RESEARCHER

## SUMMARY

Fast-learning, methodical worker with 2 years development experience and significant coding/software experience from a diverse set of engineering and research applications in both academic and professional settings. Maintains a strong mathematical aptitude and a passion for problem-solving. Lover of people and sincere communication, and always a tenacious team member with a genuine enthusiasm for learning and improvement.

## RECENT PROJECTS

### Extensible Amazon Web Scraper (2020)

- Built a modular, well-documented web scraper for harvesting Amazon product data at managed intervals, storing data and comprehensive logs in ElasticSearch, utilizing Celery with Redis for parallel processing and data buffering
- Python, Selenium, Redis (in-memory DB, queue), Celery (asynchronous tasks), ELK stack, Pipenv, Github

### Vendor Velocity Free Tools (2019)

- Created 2 front end web tools leveraging Amazon's Product Advertising API that Amazon vendors can use to improve their marketing strategies.
- PHP, Javascript, CSS, HTML, jQuery, PipEnv, GitHub. Utilized jsGrid to neatly display data to the user.

## WORK EXPERIENCE

2019

### Freelance Web Developer, Self

Chicago, IL (July 2019 - present)

- Communicate effectively and harmoniously to maintain positive client relationships
- Draw up thorough contract documents with detailed descriptions for project plans/estimates
- Independently build web tools and applications for multiple clients while managing both business and technical aspects of the projects, always delivering high-quality production code

2018

### Graduate Research Assistant, Northern Illinois University

DeKalb, IL (January 2018 - August 2019)

- Designed/executed molecular simulations across distributed systems to demonstrate effectiveness of polymer grafting at enhancing mechanical properties of a cellulose nanofiller
- Worked with Tcl Scripting and Python for data analysis, and 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 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 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 rigorous model using thermal FEA to predict HVAC needs
- Presented at 2016 Student Symposium and to Beloit College Board of Trustees