

# Abraham Michel

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## EDUCATION

**Loras College** – Dubuque, IA

GPA: 3.6181 / 4.000

Aug 2020 – May 2025

Bachelor of Science in Electro-Mechanical Engineering (3.658 / 4.000) and Computer Science (4.000 / 4.000)

*Minors:* Mathematics, Analytics, Physics, and Psychology

*Awards & Honors*

- Dean's List
- Greco-Roman Wrestling All-American
- Academic All-American

*Extracurriculars*

- Wrestling
- Planetarium Club
- Engineering Club

**Clinton Community College** – Clinton, IA

Jan 2017 – May 2020

Associate of Arts - AA, Associate of Sciences – AS

Taken concurrently in high school

*Awards & Honors*

- Dean's List
- President's List
- Phi Theta Kappa Honors Society

## WORK EXPERIENCE

**Software Test Architect** - John Deere, Dubuque, IA

Feb 2023 – Jun 2024

- Developed, executed, and reviewed test plans for various obstacle intelligence software applications in development for utilization in heavy machinery.
- Developed and maintained tools utilized on small team and department-wide scales.

**Supplemental Instructor** - Loras College, Dubuque, IA

Aug 2023 – Present

*Intro to Robotics, Physics I, Physics II, and Numerical Methods*

- Provided additional whole group, small group, and individual instruction under the SI program.
- Led lab sessions and offered constructive feedback.
- Taught fundamentals of coding to build a foundation for implementing numerical methods in MATLAB.

**Residential Advisor** - Loras College, Dubuque, IA

Aug 2021 – May 2023

- Formed and maintained relationships with residents to create a welcoming and friendly atmosphere.
- Encouraged a positive environment around campus.
- Mediated conflicts between residents.
- Created programs that will encourage student growth and development.

**Bartender** - Offshore Hotel & Resort, Bellevue, IA

Jun 2021 – Nov 2022

- Created and maintained positive relationships with customers that lead to increased sales and returning clients.
- Learned to work in high pressure environments while maintaining prompt and quality service.
- Learned to optimize work as well as multitask.
- Worked long hours, typically 10am – 2am.

**Landscaper** - CT Landscapes, Maquoketa, IA

Mar 2020 – Jun 2020

- Operated heavy machinery such as skid steers and excavators.
- Communicated efficiently as a team to optimize jobs by deciding what equipment to use and the routing for equipment.
- Installed drainage systems to ensure the longevity and quality of projects.

## VOLUNTEER WORK

**Gardener** – Dubuque Arboretum, Dubuque, IA

Sept 2023 – Aug 2024

- Cared for the rose gardens by weeding and clearing debris.
- Directed visitors around the gardens.

## **Heitkamp Planetarium President - Loras College, Dubuque, IA**

*Aug 2021 – May 2023*

- Wrote and delivered engaging and accessible presentations to diverse audiences, making use of an Emerald Pulser Projector and Stellarium.
- Collaborated with professionals at NASA and Iowa Space Grant Consortium.

## **PROJECTS**

### **Portfolio Website ([Website](#)) – Project for personal learning**

*Sept 2024 – Present*

- Developing the front-end of a portfolio website as a way to learn more about web development.
- Utilized GitHub Pages for the back-end of the website.

### **2D Adventure RPG – Project for personal learning**

*Jul 2023 – Present*

- Developing a Unity-based RPG in C#, featuring a custom scripting language for dialogue and in-game commands. Responsible for story writing, art, and designing a dynamic spell-building system that explores the complexities of emotional acceptance.

### **LinkedIn Profile to Curriculum Vitae Scraper ([GitHub](#)) – Project for personal learning**

*Sep 2024 – Sep 2024*

- Developed a web scraper, using Python and the Selenium library, that takes a LinkedIn profile and uses the information to generate a CV formatted as a .docx (Like this one).

### **Dialogue Language for Video Games – Project for personal learning**

*Jun 2024 – Jun 2024*

- Used C# to create a custom language for writing dialogue which has sped up the progress of game development. This language allows keyword commands to be activated during dialogue, branching dialogue, and rich-text styling.

### **Protocol Buffer Script Generation for MQTT Messages – Project for Deere & Co.**

*Mar 2024 – Jun 2024*

- Developed a Python automation script capable of dynamically generating secondary scripts tailored to interpret incoming MQTT messages encoded in custom Protocol Buffer formats.
- Saved time by reducing manual effort needed to write and customize scripts for each Protocol Buffer class.

### **Dynamic ASL Sign Recognition ([GitHub](#)) – Project for Loras College**

*Mar 2024 – Apr 2024*

- Developed a Python-based program that leverages GIF data to train a machine learning model for recognizing multi-sign ASL phrases.
- Designed a GUI to streamline data collection, processing, and neural network construction, while also serving as an educational tool for understanding neural networks and machine learning concepts.

### **Basic Physics Simulation ([Video 1](#), [Video 2](#)) – Project for Loras College**

*Mar 2024 – Mar 2024*

- Physics engine written in Java with OpenGL and GLSL that was adapted to make a basic FPS.

### **AI Enabled Movement on Heavy Machinery – Project for Deere & Co.**

*Feb 2023 – Jan 2024*

- Wrote, executed, and reviewed test plans for AI applications utilized on heavy machines such as ADTs, Crawlers, Backhoes, Loaders, and Excavators.

### **Automated Test Results Visualization and Reporting System – Project for Deere & Co.**

*Jul 2023 – Dec 2023*

- Used Python, JavaScript, Jenkins/Groovy, and Markdown to pull current project data entered in Rally to create interactive burnup and stoplight charts which are uploaded and displayed on a GitHub pages website.
- Saved the department ~4 hours/team lead/week previously spent on manual reporting tasks.
- Offered clear visibility into our department's performance to stakeholders outside of the product lines, facilitating informed decision-making and fostering collaboration across the organization.

### **Custom Metal Signs – Project for personal learning**

*Dec 2021 – Dec 2023*

- Designed and cut multiple metal signs using CorelDRAWX7, SolidWORKS, and a CNC plasma table.
- Finished signs by cleaning the surface with a grinder and spray paint or metal stain.

### **Image to DXF Vector Generation – Project for personal learning**

*Dec 2023 – Dec 2023*

- Developed an application that takes an image and generates the vector outlines for a DXF file to be used for CNC and 3D printing applications.

### **Automated Defect Duplication Script – Project for Deere & Co.**

*Jul 2023 – Jul 2023*

- Developed an automation script to duplicate test defects from Rally to Jira, reducing manual effort and errors for test engineers.
- Provided seamless integration between platforms that streamlined defect management leading to enhanced team productivity and accuracy.

**Test Plan Utility Application – Project for Deere & Co.**

*Apr 2023 – Jun 2023*

- Developed an application to write, manage, and execute technical test plans more efficiently and effectively while providing backwards compatibility for previous methods.

**Capstone Project: Thermoelectric Phone Charger – Project for Loras College**

*Aug 2022 – May 2023*

- Researched, designed, and prototyped a thermoelectric generator utilizing piezoelectric chips that generates enough power from tea candles to charge a phone.
- Presented a poster at Legacy Symposium.

**Video Game: Curious Caveman – Project for personal learning**

*Sep 2022 – Oct 2022*

- A puzzle game made with the Unity Engine and C# scripting where a curious caveman is bewildered by fire, in the form of a torch controlled by the player and has to navigate through treacherous environments to the goal.

**Facial Recognition Program – Project for personal learning**

*Mar 2022 – Sep 2022*

- A facial recognition program that takes an input from a webcam, develops a "mask" of the photo, and compares it to stored profiles. This project was built using Python to learn and develop a deeper understanding of the language as well as code optimization.

**Flywheel Trainer – Project for personal learning**

*Jul 2022 – Jul 2022*

- A device used for fitness training that allows the user to produce high outputs without the use of heavy equipment. This device utilizes the inertia of a weighted disk spinning on an axle which produces the counteractive force to the user's movement.

**Video Game: Fog ([itch.io](https://itch.io)) – Project for personal learning**

*Feb 2022 – Feb 2022*

- A driving game made with Unity Engine and C# where the player is driving through a fog at night trying to avoid deer and oncoming traffic.

**Video Game: Shoot 'em ([itch.io](https://itch.io)) – Project for personal learning**

*Feb 2022 – Feb 2022*

- A survivor-like arcade game made with Unity Engine and C# where the player must survive for as long as possible while defeating enemies.

**Tensegrity Chair – Project for personal learning**

*Nov 2021 – Dec 2021*

- Used physics to design a chair that is supported only by chains. Built with stainless steel held together by TIG welds. The seat is stained cedar shaped using a router.

**Video Game: Speedrunner – Project for personal learning**

*Dec 2020 – Jan 2021*

- A game made with the Unity Engine and C# where the player must traverse a series of 10 levels as fast as possible. The game features 3 characters with one of 3 unique abilities: Dash, grappling hook, and double jump.

**Acrylic Light Up Sign – Project for personal learning**

*Nov 2020 – Dec 2020*

- Utilized CNC, SolidWORKS, and CorelDRAWX7 to design and create a clear acrylic skyline.
- Used a router and woodburning to create a base for the skyline and housing for the lights

**Wind-Up Car – Project for Loras College**

*Dec 2020 – Jan 2021*

- Designed a car in SolidWORKS, adhering to project and material constraints.
- Manufactured the design using 3D printing and CNC cutting.

**Video Game: Chop Wood, Carry Water – Project for personal learning**

*Dec 2020 – Jan 2021*

- Developed an arcade style game in Unity Engine and C# as an introduction to game development and programming.

**CONFERENCES ATTENDED**

**Society of Women Engineers Conference 2024 – Chicago, IL**

**Legacy Symposium 2024 – Dubuque, IA**

**American Association for the Advancement of Science S-STEM Conference 2023 – Washington, DC**

**Society of Women Engineers Conference 2023 – Los Angeles, CA**

**Legacy Symposium 2023 – Dubuque, IA**

**Legacy Symposium 2022 – Dubuque, IA**

**Legacy Symposium 2021 – Dubuque, IA**