Abraham Michel

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EDUCATION

Loras College – *Dubuque, IA*
GPA: 3.578 / 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* *Aug 2016 – 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 - Intro to Robotics, Physics I & II - *Loras College, Dubuque, IA* *Aug 2023 – May 2024*

- Provided additional whole group, small group, and individual instruction under the SI program for Physics I, Physics II, and Intro to Robotics Programming, by leading lab sessions and offering constructive feedback

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

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.

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

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*

- Developed an automation solution utilizing Python, Groovy, and JavaScript scripts. This system seamlessly collects test data from Rally and dynamically generates burnup and stoplight charts, providing insightful visualizations of the department's performance metrics. These charts are then automatically published to a GitHub website where the charts can be downloaded and distributed via email to relevant stakeholders within the department.
- Integrated this solution into a Jenkins pipeline, saving the department roughly 4 hours per team lead each 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 axel which produces the counteractive force to the user's movement.

Video Game: Fog (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**)–** *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

American Association for the Advancement of Science S-STEM Conference 2023 – *Washington, DC*
Society of Women Engineers Conference 2023 – *Los Angeles, CA*