**EDUCATION**

**Loras College** *- [LOCATION] Aug 2020 – May 2025*

Bachelor of Science in Electro-Mechanical Engineering and Computer Science

*Extracurriculars*

* Wrestling
* Planetarium Club
* Engineering Club
* Student Instructor

**Clinton Community College** *- [LOCATION] Aug 2016 – May 2020*

Associate of Arts - AA, Associate of Sciences - AS

*Extracurriculars*

* Phi Theta Kappa Honors Society

**PROJECTS**

**Video Game: 2D Adventure RPG (Unnamed)** *Jul 2023 – Present*

* I am currently creating an open world role-playing game with the Unity Engine. So far this project has involved basic image recognition, 2D pixel art design, storytelling/writing, and implementation of various code design patterns (such as the state machine, singleton, and command patterns)

**LinkedIn Profile to Curriculum Vitae Scraper** *Sep 2024 – Sep 2024*

* Utilizing Python and the Selenium library I created a scraper that takes a LinkedIn profile and uses the information to generate a CV formatted as a .docx

**Dialog Language for Video Games** *Jun 2024 – Jun 2024*

* I created a custom language for writing dialog which has sped up the progress of game development massively. This language allows keyword commands to be activated during dialog, branching dialog, and rich-text styling.

**Protocol Buffer Script Generation for MQTT Messages** *Mar 2024 – Jun 2024*

* Developed a Python automation script capable of dynamically generating secondary scripts tailored to interpret incoming MQTT messages encoded in custom Protobuf formats.

**Dynamic ASL Sign Recognition** *Mar 2024 – Apr 2024*

* Developed a Python-based program that leverages GIF data to train a machine learning model for recognizing dynamic ASL signs, including phrases like "How are you" and "Nice to meet you."
* 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** *Mar 2024 – Mar 2024*

* A physics simulation built with Java and OpenGL.
* Custom physics engine
* GLSL Shaders

**AI Enabled Movement on Heavy Machinery** *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** *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.  
    
  By integrating this solution into a Jenkins pipeline, the department saves roughly 4 hours per team lead each week previously spent on manual reporting tasks. Furthermore, this initiative offers 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** *Dec 2021 – Dec 2023*

* Metal signs created as gifts for various reasons.  
  - Wrestling sign with backlighting  
  - Dragonflies and dandelions  
  - Texas flag  
  - American flag with name and cross  
  - Wrestling sign with metal staining

**Image to DWF Vector Generation for CNC and 3D Printing** *Dec 2023 – Dec 2023*

* An application that takes an image and generates the vector outlines for a DWF file to be used for CNC and 3D printing applications.

**Automated Defect Duplication Script** *Jul 2023 – Jul 2023*

* A script automating defect duplication from Rally to Jira, reducing manual effort and errors for test engineers. Seamless integration between platforms streamlines defect management, enhancing team productivity and accuracy.

**Test Plan Utility Application** *Apr 2023 – Jun 2023*

* 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** *Aug 2022 – May 2023*

* A thermoelectric generator made utilizing piezoelectric chips that generates enough power from tea candles to charge a phone.

**Video Game: Curious Caveman** *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** *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 as a way to learn and develop a deeper understanding of the language as well as code optimization.

**Flywheel Trainer** *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** *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 running across the road and oncoming traffic.

**Video Game: Shoot 'em** *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.

**"Floating" Chair** *Nov 2021 – Dec 2021*

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

**Video Game: Speedrunner** *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.

**WORK EXPERIENCE**

**Software Test Architect** *- John Deere, Dubuque, Iowa, United States Mar 2023 – Jun 2024*

* Developed, executed, and reviewed test plans for various obstacle intelligence software programs being developed for utilization in heavy machinery.
* Developed and maintained various tools and applications utilized on both small team and department wide scales.
* Gave feedback and suggestions for fixes and changes in meetings to help create software that helps increase the safety and productivity of people at construction sites.

**Student Instructor - Intro to Robotics** *- Loras College, Dubuque, Iowa, United States Jan 2024 – May 2024*

* Led lab sessions
* Provided guidance on fundamental programming and robotics concepts
* Graded assignments and offered constructive feedback
* Workshopped lab assignments to be used in class

**Student Instructor - Physics** *- Loras College, Dubuque, Iowa, United States Aug 2023 – May 2024*

* Helped students in Physics understand and work through the material as a supplement to their in-class instruction.

**Residential Advisor** *- Loras College, Dubuque, Iowa, United States Aug 2021 – May 2023*

* Form and maintain relationships with residents to create a welcoming and friendly atmosphere.
* Encourage a positive environment around campus
* Resolve conflicts between residents
* Create programs that will encourage student growth and development

**Heitkamp Planetarium President** *- Loras College, Dubuque, Iowa, United States 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 leading scientists and astronauts at NASA and Iowa Space Grant Consortium.

**Bartender** *- Offshore Hotel & Resort, Bellevue, Iowa, United States Jun 2021 – Nov 2021*

* 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, Iowa, United States Mar 2020 – Jun 2020*

* Operated heavy machinery such as skid steers and excavators
* Worked long hours, typically 7am-7pm
* 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