Joshua **Watters**

COMPUTER SCIENCE STUDENT

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Summary

*Highly driven, detail-oriented, software developer seeks opportunities in GPU related workflows. Developing skills in: Cuda, ML, AI, Computer Vision and Computer Architecture.

*Focus areas include: Computer Graphics, Deep Learning, High Performance Computing Systems, Visualization Techniques, Tensorflow, Algorithms, Docker, Large Data and Linux infrastructures.

*Elective coursework included Embedded Systems and 3D Design Softwares.

*To get to know me better, please review my projects section at: https://www.portfolio.mydevs.link. These were self completed and contain code samples and actively maintained Git repositories.

Education

Iowa State University   *Ames, Iowa*

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING - IN PROGRESS   *Jan. 2025 - Present*

- Computer Engineering
- Embedded Systems

Des Moines Area Community College   *Des Moines, Iowa*

ASSOCIATE OF SCIENCE-IN PROGRESS   *Aug. 2022 - Dec. 2024*

- Associate of Science — 3.40 Program GPA
- Honors, Phi Theta Kappa

Work Experience

Department of Energy, Ames National Laboratory   *Ames, Iowa*

DATA SCIENCE WORKSHOP FOR ENERGY SOLUTIONS   *Summer 2023*

- Project included collecting large data set (276,416x52) via API call. Tensorflow and Python analysis of data using over 10 ML models (Keras and Numpy). Methods included KNN, random forest regression, etc. More information can be found on the web at www.github.com/joshwatters. Data-set targeted materials research (Chemistry data).
- Linux driven, Python machine learning. Implementations of various regression model techniques with code examples.
- Data-set targeted materials research (Chemistry data).
- Project Details: https://www.github.com/joshwatters/DOE
- Developed machine learning algorithms and regression models. Sample data and code included.

Coursework

Sum 2022 **Python**, Machine Learning - See 2022 Summer Internship for Details   *Des Moines, Iowa*
Fall 2022 **Matlab**, Engineering Computations - See Honors for Details   *Des Moines, Iowa*
Fall 2022 **Honors Calculus**, Regression - See Honors for Details   *Des Moines, Iowa*
Fall 2022 **Honors Chemistry**, Materials Research - See Honors for Details   *Des Moines, Iowa*

Extracurricular Activity

"Limit" Quadruped   *Ames, Iowa*

12 DEGREE OF FREEDOM QUADRUPED DESIGN   *Winter 2024*

- Designed and built powerful quadruped that allows for exploring Nvidia software, traversal, CUDA, Visualization and AI/ML workflows.
- "Limit" is capable of 360 Degree Stereo Vision, LLM's, TTS, and more. The project has transitioned to use Docker deployments and AWS Websockets.
- Limit transitions easily to Isaac Simulator and Isaac Lab to make use of the latest cutting edge technologies in Reinforcement Learning. I designed and programmed Limit during my time in undergraduate. https://www.limitx.click/

AR4 MK3 Robot Arm   *Ames, Iowa*

6 Degree of Freedom Robot Arm Build   *Summer 2024*

- Built, assembled and wired AR4 MK3 robot arm by Chris Annin.
- Used the NVIDIA Jetson nano platform for object detection and motor control with onboard inference.
- Project Details: https://www.github.com/joshwatters/
- Ported the project to NVIDIA Isaac Sim. Sample videos, data and code included.

Honors Calculus and Chemistry Project   *Des Moines, Iowa*

Des Moines Area Community College   *Fall 2023*

- Developed understanding of regression modeling & Matlab calculations using materials research data.
- Code examples and interactive proof of concept can be found here: https://www.github.com/joshwatters/DOE
- Utilized Matlab, Python, MongoDB, HTML5, flask and LaTeX.
- Focused on large scale data, repeatability and systematic approaches.
- Procedural - Plot Generation.
- Written project outline published in docs with video supplements.

ISU Solar Car   *Ames, Iowa*

Solar Car Team   *Present*

- https://www.prisum.org/projects/

ISU Robotics Club   *Ames, Iowa*

Robotics Club Team   *Present*

- https://fundisu.foundation.iastate.edu/project/25615

IEEE   *Ames, Iowa*

Student Member IEEE   *Summer 2024*

- https://www.ieee.org/