

# William Valentine

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**Objective:** Seeking research experience in the field of Computer Science.

**Education:** **Bachelor of Science, Computer Science** **May 2027**  
Rose-Hulman Institute of Technology, Terre Haute, IN  
Minors: Robotics, Cognitive Science, Mathematics, Imaging

*Relevant courses: Data Structures, Linear Algebra, Combinatorics, Computer Architecture, Programming Language Concepts, Web Programming, Differential Equations, Theory of Computation, Operating Systems, Computer Vision, Analysis of Algorithms, Machine Learning*

High School Dual Program with Houghton University, Houghton, NY **July 2023**  
*Relevant courses: Programming I, Programming II, Web Frameworks*

**Skills:** Programming Languages: JavaScript, Python, Java, C, Assembly, RISC-V, Scheme  
Systems: Windows, Macintosh, Linux

**Research:** **University of Nevada, Reno, Reno, Nevada** **Summer 2024 - Present**  
REU Site: Collaborative Human-Robot Interaction for Robots in the Field

- Worked alongside Dr. David Feil-Seifer and Dr. Emily Hand to create one of the first systems for the detection human comfort and discomfort
- Published in ISVC2024 (first author), second paper under review at Machine Visions and Applications (first author)

**Rose-Hulman Institute of Technology, Terre Haute, IN**  
Resolution of command ambiguity using LLMs for robots **Fall 2024 - Present**

- Worked alongside Dr. Michael Wollowski to introduce a system and benchmark for resolving confusing parts of commands given to robots using images
- Work was accepted at AHFE2025 (first author)

LiDAR Point Cloud Alignment Using Hand Crafted Feature **Fall 2023 - Present**

- Worked alongside Dr. Lixing Song to address alignment issues caused by learning based point cloud alignment methods
- Work was accepted to ICDCS2024 (second author)

**Houghton University, Houghton, NY**  
Intersection Traffic Automation for Vehicle **Summer 2023**

- Created a physical, working model of a server-controlled autonomous intersection

Controller-free video games **Spring 2023**

- Created a demo of Tic-Tac-Toe that did not require any controllers or keyboards
- Explored other examples of controller-free video games

**Experience:**      **Grader and TA, CSSE Department, RHIT**      **Spring 2023 - Present**

- Graded for Intro to Software Development, Web Development, Programing Language Concepts, and Data Structures and Algorithms
- Created and designed an automatic grading system utilizing Python

**Managing Partner, Tamriel Savings Co.**      **August 2020 – August 2023**

- Created an image scanning system that recorded text from images 138% faster than leading commercial services with over 98% accuracy
- Grew the user base to 2-3K users daily
- Created a Discord bot that is on over 1,000 servers

**Projects:**      **RISC-V Processor**      **Spring 2024**

- Created a processor with support for Euclid’s algorithm using a memory-to- memory architecture
- Implemented using Verilog and tested using ModelSim

**Scheme Interpreter**      **Winter 2023**

- Created an interpreter for running a scheme-like syntax using scheme
- Language had local and global variable support along with support for functional programming styles

**Publications:**

**Valentine, W.,** and Wollowski, M. (2025). *Assessment of the Capabilities of Multimodal Large Language Models in Locating and Resolving Ambiguities during Human-Robot Teaming*, AHFE2025

**Valentine, W.,** Webb, M., Collum, C., Feil-Seifer D., and Hand, E., (2024). *HCC: An explainable framework for classifying discomfort from video*, ISVC2024

Song, L., **Valentine, W.,** Yang Q., Wang H., Fang H., and Liu, Ye., (2024). *BB-Align: A Lightweight Pose Recovery Framework for Vehicle-to-Vehicle Cooperative Perception*, ICDCS2024

**Honors:**      **Rose-Hulman Institute of Technology, Terre Haute, IN**

Rose Research Fellows

- Chosen for selective research experience for developing research skills and equipping students for futures in academics and research

Nominated for CSSE TA of the year

Houghton University, Houghton, NY

London Honors Program

- Highly competitive program for undergraduate students to study the humanities and art in London for a semester

Outstanding Computer Science Research 2023

**Grants:**      National Science Foundation, Alexandria, Virginia,      **Summer 2024**

Conference Travel Award \$500

Rose-Hulman Institute of Technology, Terre Haute,      **Fall 2024, Spring 2025**

Rose Research Fellows \$500, \$1000      **Spring 2024**

IN IP/ROP 2024 \$500      **Spring 2024, Spring 2025**

CSSE Departmental \$2000, \$1000