William Valentine

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

Education:

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

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

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:

Indiana University, Bloomington, Indiana **Summer 2025 - Present**
Summer Research Intern
- Worked alongside Dr. David Crandall and Dr. Selma Sabanovic to create novel systems for social robots interacting with older adults.

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 of 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 Features **Fall 23 - Summer 24**
- Worked alongside Dr. Lixing Song to address alignment issues caused by learning based point cloud alignment methods
- Work was accepted to ICDCS2024 (second author)

Vanderbilt University, Nashville, Tennessee **Summer 2025**
VORTEX (Vanderbilt Online Research Training and Exploration) Member
- Invited to join the first cohort of a summer program focusing on research ethics and research writing.

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

- Graded for Intro to Software Development, Web Development, Programing Language Concepts, Data Structures and Algorithms, and Mechatronics
- 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

Service:

AAAI: AI Magazine [2 reviews]
AAAI: AIES SP 2025 [2 reviews]
ICDCS Student Volunteer

Honors and Roles: **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
CSSE Student Advisory Board Member
CSSE Mentor Program Leadership Team

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,
Conference Travel Award $500 **Summer 2024**

Rose-Hulman Institute of Technology, Terre Haute,
Rose Research Fellows $500, $1000 **Fall 2024, Spring 2025**
IN IP/ROP 2024 $500 **Spring 2024**
CSSE Departmental $2000, $1000 **Spring 2024, Spring 2025**