William Valentine

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Education:

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

Relevant courses: Cognitive Psychology, Computer Vision, Deep Learning, Machine Learning, Linear Algebra, Data Structures, Combinatorics, Computer Architecture, Programming Language Concepts, Web Programming, Differential Equations, Theory of Computation, Artificial Intelligence

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, Scheme
Systems: Windows, Macintosh, Linux

Research:

Indiana University, Bloomington, IN **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
- Worked on large-scale user study projects involving social robots and their impacts on people

University of Nevada, Reno, Reno, NV **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
- Used deep-learning powered pose estimation, valence and arousal, audio transcription, and textual sentiment analysis to model human behavior

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

LiDAR Point Cloud Alignment Using Log-Gabor Filters **Fall 23 - Summer 24**

- Worked alongside Dr. Lixing Song to address alignment issues caused by learning based point cloud alignment methods for self-driving vehicles
- Successfully created an algorithm for aligning point clouds in complex, uncertain environments

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, Programming Language Concepts, Data Structures and Algorithms, and Mechatronics
- Created and designed an automatic grading system utilizing Python

Publications Under Review (paper names and conferences obscured for blind review):

Valentine, W., Kamino, W., Hsu, L., Sabanovic, S., Crandall, D., & Khoo, W. (2025). *Novel approach to in-the-wild audio-visual datasets for emotion recognition*, *Computer Vision Conference*.

Valentine, W., Sabanovic, S., Crandall, D., & Khoo, W. (2025). *Multimodal framework for complex interactions with robots and humans*, *Robotics Conference*.

Valentine, W., Wang, Y., Kamino, W., Sato, H., Swaminathan, M., Noguchi, A., Ramirez, F., Hirata, Y., Oh, J., Nagata, S., Tsui, K., Hsu, L., Sabanovic, S., Crandall, D., & Khoo, W. (2025). *Large-scale cross-cultural user study of social robots interacting with older adults*, *Robotics Journal*.

Publications:

Valentine, W., & Wollowski, M. (2025). *Assessment of the capabilities of multimodal large language models in locating and resolving ambiguities during human-robot teaming. AHFE 2025.*

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

Song, L., **Valentine, W.,** Yang, Q., Wang, H., Fang, H., & Liu, Y. (2024). *BB-Align: A lightweight pose recovery framework for vehicle-to-vehicle cooperative perception. ICDCS 2024.*

Service: **HRI Main Track 2025 [3 reviews]**
HRI Short Papers Track 2025 [1 review]
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 Fellow, Nominated for CSSE TA of the year
Goldwater Scholar Nominee 2025-2026
CSSE Student Advisory Board Member
Academic Computing Implementation Committee (Student Rep)
HRI: Special Recognitions for Outstanding Reviews
Houghton University, Houghton, NY
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**