William Valentine

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Objective: Seeking research or internship experience in the field of Computer Science

Education:

Bachelor of Science, Computer Science and Mathematics (Double Major) **May 2027**
Rose-Hulman Institute of Technology, Terre Haute, IN
Relevant courses: Data Structures, Intro to Systems Programming, Introduction to Software Development, Object-Oriented Software Development, Programming Language Concepts, Computer Architecture, Web Programming

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, Verilog
Systems: Windows, Macintosh, Linux

Research:

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

- Will likely be working with Dr. Emily Hand in exploring user comfort in HRI settings through interactions

Rose-Hulman Institute of Technology, Terre Haute, IN
LiDAR Point Cloud Alignment Using Hand Crafted Features **Fall 2023**

- Worked alongside faculty 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 Vehicles **Summer 2023**

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

Modeling and screening aggregation inhibition of amyloid-beta peptides by small molecules as potential drug candidates **Summer 2023**

- Designed a python-based command-line tool to simplify the usage of AutoDock Vina in molecular bonding
- Created a tool to automatically process Mass Spectroscopy results
- Sped up the screening process dramatically; tools will be used in Houghton courses

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, CSSE Department, Rose-Hulman Institute of Technology

- Graded and assisted with student homework for over 40 students
- Created and designed an automatic grading system utilizing Python to improve grading return speeds and improve student satisfaction
- Was nominated for CSSE TA of the year

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

Editor Trees **Fall 2023**

- Created program for updating, deleting, and rotating self-balancing AVL style binary trees.
- Implemented using Java

Publications:

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

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:

Rose-Hulman Institute of Technology, Terre Haute, IN
IP/ROP 2024
CSSE Departmental