Joseph Rendleman - *Computer Engineer*

Contact	
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LinkedIn	LinkedIn
Github	Github

Summary

Creative and **passionate** Computer Engineer who's excited to **innovate** and **learn** in a fast paced, well balanced work environment. Looking for a position in **Embedded Software or Firmware Engineering** with an emphasis in **sustainability** and **electrification**.

Education

University of Minnesota: College Of Science and Engineering - Bachelor's of Computer Engineering, 05/2023 (ABET Accredited)

Work Experience

Silicon Validation Engineer - HPE (08/2023-Present)

- **Maintained Python** based **job-batching framework** for **Emulation** sytems with over **40 users**. **Decreased** reported issues from 1-2 a day to 1-2 a month by re-writing to use modern Pythonic concepts such as context management.
- Contributed to Python based **distributed testing framework** for network ASIC's which found **over 30 bugs** in the most recent chip version using **constrained random stimulus** and other **UVM** related ideas.
- **Increased performance** of testing framework on small **ARM** based switch controllers by **80%** using benchmarking tools such as **py-spy** and performance enhancers such as **Cython**.
- **Lead** and **coordinated** 2 team interns to complete over 10 individual **JIRA** each throughout their summer internship.
- **Lead** 2 engineers with **20+ years of experience** to develop a **pytest** suite for our job batching framework.
- Participated in **code review**s and emphasized **readability** and **efficiency** of code to colleagues.
- **Maintained 2-3 Github Repositories**.

Electrical Team Technical Lead - UMN Solar Vehicle Project (05/2021-05/2023)

- **Simplified and improved the reliability of Embedded C++ Software** applications for **ECUs** used to control the vehicle's **SAE J1772** charging interface and lights and vision peripherals.
- **Designed and Assembled PMSM Motors** used on vehicle to win **2nd place** at the World Solar Challenge. Increased motor torque output by **56%** while maintaining an efficiency of **96%** and a top speed of **70 mph** in a limited space.
- Developed Python based **Strategy Solver** tool with a **REACT.js** web-GUI used to calculate vehicle efficiency and improve race performance as well as receive and decode **real-time, wireless vehicle telemetry** for vehicle monitoring during race.

- Participated in **debug** of many systems on the car including the vehicle **CAN** bus, wiring harness, and hardware and firmware malfunctions using tools such as **oscilloscopes, logic analyzers, and CAN sniffers** on both in-vehicle and **HIL** environments.
- Particapated in the 2022 American Solar Challenge as a driver and strategy team member and won **1st place** in the MOV class.
- Participated in **code reviews** as one of the lead developers and maintainers of vehicle code.
- **Lead** and **Educated** 20-30 new team members on both the **Firmware** and **Motors** teams.
- Helped make important team decisions as part of the **Executive team**.

Silicon Validation Intern - HPE (06/2022-08/2022)

- Developed **Scapy** based Ethernet packet creation library for test framework.
- Expanded my knowledge of validation engineering, Ethernet protocol, and the system structure of supercomputers.

Undergraduate Researcher - UMN ECE (02/2021-05/2022)

- Participated in 2 research projects under professors Kia Bazargan and Marc Riedel.
- Modeled a **Neural Network** for use in **5G network channel estimation** for **Massive MIMO** systems using **CUDA toolkit for python**.
- Modeled a **Neural Network** for predictions of **HLA-protein binding strengths** used in **COVID immunology** also using **CUDA**.

Campus Tour Guide - UMN Visit Office (05/2021-08/2021)

- Engageed 10-20 prospective students and parents in each tour and provided them with an introduction to the university.

IT Help Desk Specialist - UMN IT (05/2020-08/2020)

- **Supported** Alumni, Faculty, Staff, and Students with university-related **software and hardware issues**.
- Interacted with 30-40 customers daily via online chat, email, and phone calls.

Media and Technology Intern - Edina Public Schools IT (05/2018-08/2018)

- **Imaged, fixed, and maintained** over 100 district computers to prepare them for the next school year.

Programming Languages

- Python
- C/C++
- Bash
- Make
- MATLAB
- Java
- JavaScript