Marshall Rawson

marshallrawsonjobs@gmail.com Austin, Texas

Github (https://github.com/MarshallRawson) LinkedIn (https://www.linkedin.com/in/marshall-rawson)

Skills

- Agentic AI: Amazon
- C (Linux Kernel): Google
- C++ (Linux Userpsace): Nauticus Robotics, Sylphase, OSRF, MIL, AFRL
- Python: Nauticus Robotics, Sylphase, OSRF, MIL, Leidos
- Bash: MIL, Sylphase
- GPU via CUDA: hash-shader (https://github.com/RustyBamboo/hash-shader)
- Micro Controller System Design (embedded C): AFRL, UF
- Kan Ban / Scrum / Agile: Nauticus Robotics, Sylphase, MIL, OSRF

Work Experience

Amazon

AI Software Engineer Austin, Texas August 2024 - Present

- Build AI agents to deliver meaningful benefit to supply chain customers.
- Contribute and maintain RAG architecture for AWS Supply Chain (ASC) Q.
- Work closely with subject matter experts and product team to make AI work for all customers.

Google

Embedded Software Engineer Sunnyvale, California January 2023 - August 2024

- Manage kernel source code and releases for gen 1 Axion server NPI program.
- Host summer intern to build utility for tracking source code patches across releases as a horizontal benefit to all NPI programs.
- Work closely with vendors, software engineers, and hardware engineers to deliver custom linux kernels for program development.
- Write custom drivers for novel CPU to enable performance improvements and hardware specific error decoding.

Nauticus Robotics

Robotics Software Engineer Houston, Texas January 2022 - October 2022

- Re-purpose ROS2 control, autonomy, perception, and simulation for prototyping of an autonomous underwater vehicle for explosive ordinance disposal.
- Work closely with mechanical, electrical, and other software engineers to accurately simulate and deploy an autonomous underwater vehicle.
- Completed major phase of vehicle development and integration demonstration to customer in the field.

Sylphase

Software Engineer Houston, Texas April 2021 - January 2022

- Design and maintain software that interfaces closely with hardware devices.

- Work closely with electrical, mechanical, and other software engineers to deliver GNSS solutions and internal tools.

Leidos

Linux Systems Engineer Co-op/Intern Bethesda, Maryland January 2021 - April 2021

- Design, triage, and maintain Linux systems infrastructure.
- Work closely with Physics, Signal Processing, and Information Security experts to deliver modeling, simulation, and training services.

University of Florida (UF)

Microprocessor Applications Undergraduate Lab TA Gainesville, Florida May 2020 - August 2020

- Design automated embedded evaluation system which utilized embedded elements wired together with and FPGA and stimulated with an ARM SoC
- Run weekly lab session to evaluate students' understanding of embedded systems software development

Open Source Robotics Foundation (OSRF)

Software Engineering Intern Mountain View, California June 2019 - August 2019

- Worked on the team creating the 2019 Virtual Robot X (VRX) competition for simulated autonomous robots
- Developed automation for generating simulated physical environment with unique properties
- Designed and implemented robot generation and compliance test for competitor robot submissions
- Implemented design improvements to VRX competition systems to allow for expanding requirements by 10 times

University of Florida Machine Intelligence Laboratory (MIL)

Lead Robotics Software Developer Gainesville, Florida August 2018 - May 2021

- Unified Perception Interface (https://youtu.be/7jTNgrSyskQ)
- Laid Foundation for Autonomous Racecar Simulation in Gazebo (https://github.com/uf-mil/mil/tree/master/IndyAV/simulation/indyav_gazebo)
- Re-Worked Passive Sonar Processing Pipeline to Locate a Beacon
- 2019 Virtual Robot X Competition (5th place)
- 2019 RoboSub Competition
- 2018 Robot X Maritime Challenge (Finalist)

Air Force Research Laboratory (AFRL)

Embedded Software Engineering Intern Eglin Air Force Base, Florida May 2018 - July 2018

- Developed micro-controller software for a multi-stage parachute system
- Populating an un-used MAV-Link command sent over 2.4 GHz to the UAV's for the deployment signal
- Validated UART protocol data stream through software/hardware in-the-loop simulation
- Utilized MBed Real-Time Operating System on an ARM Cortex M4
- Simulated operational environment with JSB Sim physics simulator and MAV-Proxy API (Python)

Education

University of Florida

Bachelor of Computer Engineering Gainesville, Florida August 2018 - May 2021

- *GPA:* 3.60 / 4.0
- *Relevant Coursework:* Advanced Systems Programming, GPU Accelerated Programming, Design 2 (Laboratory Research), Design 1 (Build embedded System), Microprocessor Applications 1 & 2, Fundamentals of Machine Learning, Data Structures, Linear Algebra, Combinatorics, Regression Analysis

Conferences

- Marshall Rawson, Michael G. Rawson. Petri Net Parallel Computing Theory and Applications. Sai Computing Conference. July 2023.
- Marshall Rawson, Michael G. Rawson. Petri Nets for Concurrent Programming. International Conference for High Performance Computing, Networking, Storage and Analysis (SC22). Nov 2022.

Publications

- Marshall Rawson, Michael G. Rawson. Petri Net Parallel Computing Theory and Applications. *Intelligent Computing* (SAI 2023). Sept 2023. https://link.springer.com/chapter/10.1007/978-3-031-37717-4_9
- Marshall Rawson, Michael G. Rawson. Petri Nets for Concurrent Programming. *Proceedings of International Conference for High Performance Computing, Networking, Storage and Analysis* (SC22). Nov 2022. https://ieeexplore.ieee.org/abstract/document/10025476
- Brian Bingham, Carlos Aguero, Michael McCarrin, Joseph Klamo, Joshua Malia, Kevin Allen, Tyler Lum, Marshall Rawson, Rumman Waqar. Toward Maritime Robotic Simulation in Gazebo. *OCEANS 2019 MTS/IEEE SEATTLE* Jan. 2022. https://ieeexplore.ieee.org/abstract/document/8962724

Technologies:

Python, C/C++, Git, ROS, numpy, Linux, Rust, Go, Cuda, SQL, Scikit-learn, Jupyter, Tensorflow, Bash/Shell, VHDL, TCP/IP, UDP/IP, I2C, SPI, Concurrent Programming, Scrum/Agile, Test Driven Development, Continuous Integration, Markdown, Restructured Text, ReadTheDocs