

Rezwan Matin

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SOC FUNCTIONAL VALIDATION ENGINEER

Engineer with 3+ years of experience developing tests in post-silicon to find MTBF bugs in enterprise SoCs. Led the development of an internal testing framework which automated regression testing by generating random, reproducible, concurrent tests for stressing different parts of a system. Strong foundation in test development, scripting, container orchestration, build tools, command-line utilities and debugging.

KEY SKILLS

- **Technical Skills:** Python | Linux | Docker | Git | K8s | GCC | Debug | Machine Learning | Vim
- **Soft Skills:** Integrity | Teamwork | Adaptability | Communication | Documentation

EXPERIENCE

Intel, Austin, TX

Nov 2023 – Nov 2024

SoC Functional Validation Engineer

- **Framework development:** Developed features using Python for an internal post-silicon validation tool capable of automatically generating random, reproducible (seeded), multi-threaded (taskset), multi-workload (OS-based) tests for validating Intel's Granite Rapids and Sierra Forest SoCs before products reach PRQ.
- **Debug:** Triaged and categorized every failure to an SoC, platform or software issue, and communicated with appropriate teams to find a resolution.
- **Tracking:** Utilized Jira for reporting issues, tracking progress and requesting lab assistance with test platforms.
- **Training:** Hosted multiple training sessions on test development, tool usage and debug.

Intel, Austin, TX

Aug 2021 – Nov 2023

System Validation Engineer

- **Content development:** Leveraged internal and open-source applications (FIO, POVray, etc.), and built multiple binaries using internal versions of open-source compilers (GCC and ICX) for maximizing test coverage and finding bugs in Intel's Sapphire Rapids and Emerald Rapids SoCs.
- **Containerization:** Containerized test applications for production and debugged failures inside containers using Docker and Containerd.
- **Infrastructure development:** Configured multiple nodes using SSH to run MPI workloads like GROMACS on bare-metal by connecting systems via InfiniBand NICs.
- **Support:** Engaged with internal customers to help with content enablement and feature requests (supporting new products, adding new workloads, updating run configurations, etc.) for aiding in the validation efforts of LTR products such as Intel's Broadwell (Xeon D) and Skylake SoCs as well as client products such as Intel's Meteor Lake SoCs.
- **Documentation:** Enabled automatic code documentation generation using Sphinx and GitHub Actions, and created detailed enterprise wiki entries (user manual, debug manual, release notes, etc.) to help developers and internal customers understand tool usage.

SureStart, New York, NY

Apr 2021 – Aug 2021

Associate Curriculum Developer

- SureStart arranges programs to teach high-school and undergraduate students the concepts of machine learning and artificial intelligence.
- Collaborated with peers to design the curriculum for the summer program, which was in collaboration with MIT Media Lab.

SureStart, New York, NY
Mentor

Mar 2021 – Apr 2021

- The Future Makers AI program was a week-long program for middle-schoolers organized by SureStart in collaboration with MIT Media Lab.
- Paired up with a middle school teacher to teach the Creativity and AI module by leveraging a rich set of tools and learning materials provided by MIT Media Lab.

SureStart, New York, NY
Machine Learning Mentor

Feb 2021 – Mar 2021

- The VAIL program was a spring internship organized by SureStart.
- Mentored high-school and undergraduate students with different educational backgrounds and programming experiences in Machine Learning and Deep Learning.

Texas State University, San Marcos, TX
Graduate Research Assistant

Jun 2019 – Aug 2019

- Mass-produced an automatic recording devices (ARD) which was used to track Houston Toads.
- Used Raspberry Pi 3 for processing the audio signals that were recorded using a USB microphone.
- Used Witty Pi 2 to manage the power consumption of the Raspberry Pi, with power supplied by a 12 V battery connected to a 35 W PV solar cell.
- ARD was scheduled to record audio for 10 minutes every hour for seven hours per day and send notifications if Houston toads were detected using email and SMS through a USB cellular modem.

Texas State University, San Marcos, TX
Graduate Instructional Assistant

Aug 2018 – Dec 2020

- Assisted students with laboratory experiments and graded their assignments.
- Coursework: Numerical and Scientific Data Analysis using Python, Microprocessor, Analog and Mixed-Signal Design, Probability, Random Variables, & Stochastic Process for Engineers.

EDUCATION

Master of Science in Electrical Engineering
Texas State University

Aug 2018 – Dec 2020

- Coursework: CAE Simulations on HPC Systems, ML for Engineering Applications, Advanced Computer Architecture, Regression Analysis.
- Thesis: A speech emotion recognition system for helping children with autism spectrum disorder.

Bachelor of Science in Electrical and Electronic Engineering
Shahjalal University of Science and Technology

Jan 2011 – Dec 2016

RESEARCH AND PUBLICATIONS

- D. Valles and R. Matin, "An audio processing approach using ensemble learning for speech-emotion recognition for children with ASD," IEEE World AI IoT Congress (AIIoT), May 2021.
- R. Matin and D. Valles, "A speech emotion recognition solution-based on support vector machine for children with autism spectrum disorder to help identify human emotions," IEEE Intermountain Engineering, Technology, and Computing Conference (I-ETC), October 2020.

ACCOMPLISHMENTS

- Best Presenter award at the IEEE World AI IoT Congress (AIIoT), May 2021.
- Third Computing Paper award at the IEEE Intermountain Engineering, Technology, and Computing Conference (I-ETC), October 2020.
- Recipient of the Academic Performance Excellence Award for AY2019 and AY2020 (Director's List), September 2020.
- Winner of the 2020 Texas State University Three Minute Thesis (3MT) competition, February 2020.