Samridha Murali

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EDUCATION

University of Maryland   College Park, MD
Master of Engineering - Software & Cyber Security - GPA: 3.7/4.0   January 2022 - December 2023
Manipal Academy of Higher Education   Karnataka, India
Bachelor of Technology - Computer Science & Engineering : GPA: 9.0/10.0   July 2017 - July 2021

WORK EXPERIENCE

ScaleAI   San Francisco, CA
Machine Learning QA Engineer - Freelance   January 2024 - Ongoing
- Developed prompts to detect deviations in the Flamingo **Foundation model** and Bulba **Large Language Models**.
- Evaluated and validated machine learning models' performance, focusing on **precision**, **recall,** and **F1-score**.

University of Maryland   College Park, MD
Software Development Test Engineer   June 2022 - December 2022
- Tested 10+ Web applications at different stages of SDLC - Functional, Integration, End-to-end, post-development, API testing, and Load test across browsers; reported & analyzed root cause for 50+ critical issues in **agile/scrum environment**.
- Automated 150+ test cases using **Cypress (Javascript)** for end-to-end testing and reduced man-hours by 30%.
- Written and executed test plans, test cases (TDD, BDD), and REST API testing, improving bug detection rate by 15%.

HONEYWELL   Pune, India
Software Development Engineer (SRE)   January 2021 – December 2021
- Designed and developed a proprietary Testing tool for E2E testing in selenium & Appium and integrated it into the CI/CD pipeline for testing applications, resulting in a 50% reduction in manual testing efforts and 30% increase in test coverage.
- Developed and implemented an **automated Machine learning model** as a microservice and deployed the microservice in the **Kubernetes** cluster, resulting in a 50% reduction in manual monitoring efforts for health and performance systems.

PROJECTS

NERO OPTIMIZED - ([Github](https://github.com))   July 2024 - August - 2024
- Optimized NeRO (Neural Geometry and BRDF Reconstruction of **Reflective Objects** from Multiview images) by using **InstantNGP** for geometry reconstruction and microfacet **BRDF** for metalness, roughness, and albedo prediction.

ADVANCED VISION MODEL - (link)   June 2024 - ongoing
- Experimented, tested, and deployed research models such as variations of Gaussian splatting, NeRF from CVPR, ICCV, etc.

COMPUTER VISION - ([Github](https://github.com))   June 2024 - July 2024
- Performed benchmarking between **CNN (in PyTorch)** - achieved 98% accuracy and **KAN (Kolmogorov–Arnold Networks)** - achieved 97% accuracy for **image classification** using the CIFAR10 dataset.

3D RECONSTRUCTION - ([Github](https://github.com))   May 2024 - June 2024
- Developed and Deployed a Full-Stack (React, FastAPI) 3D Modeling Application for Dense multiview stereo reconstruction.
- Implemented **Scalable Backend** Architecture using React, FastAPI, and various **AWS services** (Sagemaker, Lambda, S3, DynamoDB, API Gateway, Amplify, Route 53, CloudFront) and **Optimized** Application's Performance and Reliability.

EMBEDDED SECURITY - ([Github](https://github.com))   January 2022 – June 2022
- Performed static and dynamic **Firmware testing** on the Wyze Camera used by 3 Million users, to identify vulnerabilities.
- Identified 2 potentially exploitable vulnerabilities, by reverse engineering the firmware using Ghidra, Hydra, Radare2.

SKILLS

3D-Perception: 3D Geometry, ViT (Visual Transformers), 3D Deep learning, Multi-modal perception, camera, pytorch.
Development: Design, Development, Integration, Testing, Deployment, FastAPI, React, Django, Kubernetes, Docker.
Coding Languages: Python, Javascript, C++, Rust, SQL, Bash/shell.
Courses: CNN for Visual Recognition (Stanford coursework), Computer Vision, Machine learning, Deep learning.

PUBLICATIONS

Samridha Murali, Aswath Muthuselvam, "Evaluating the Geometric Consistency of Text-to-3D Generated Models Using Surface Normal Analysis," WiML Workshop, NeurIPS 2024 (Accepted; awarded travel grant).