SHARVARI DESHMUKH

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Master's student actively looking for full-time opportunities starting Mar 2025

Education

University of California San Diego, USA   **Sep 2023 – Mar 2025**
M.S. in Electrical & Computer Engineering (Signal & Image Processing specialization)   *GPA: 3.68/4*

Coursework: ML for Physical applications, GPU Programming, Medical Imaging, Intro to Visual Learning, Digital Image Processing, Wavelets & Filterbanks, Statistical Learning, Linear Algebra, Sensing & Estimation in Robotics

Birla Institute of Technology and Science, Pilani, India   **Aug 2013 – Dec 2017**
B.E. (Hons.) in Electronics & Instrumentation Engineering   *GPA: 3.62/4*

Technical Skills

Languages & Frameworks: Java, Python, Golang, C/C++, PyTorch, TensorFlow, CUDA, MATLAB, Rust, JavaScript
Tools & Competencies: AWS (RDS, SQS, S3, EKS), MySQL, MongoDB, Redis, Apache Kafka, Git, Docker, Kubernetes, Linux, Computer Vision, Machine Learning, Data Structures & Algorithms, Software Design Patterns

Research & Projects

Camera-to-Robot pose estimation for robotic arms | *Advanced Robotics and Controls Lab, UCSD*
- Exploring advanced markerless camera-to-robot pose estimation techniques, focusing on leveraging vision-language models and self-supervised learning to optimize accuracy and adaptability in real-world robotic systems.

Kidney stone fragments classification | *Advanced Robotics and Controls Lab, UCSD*
- Integrated **segmentation models with optical flow** for moving object detection and classification in ureteroscopy videos, enabling precise identification of kidney stones, fragments, and dust to automate laser settings in lithotripsy.

Real-time multimodal device state classification for industrial devices
- Built a multimodal deep learning model for real-time device state classification, achieving **98.2% accuracy** on Mudestra dataset and a **92.5% model size reduction** for efficient edge deployment.

Diffusion-based image restoration: A zero-shot approach
- Implemented a zero-shot image inpainting technique based on the **Denoising Diffusion Null-Space Model**, achieving benchmark results for image reconstruction on occluded surgical images by training on IEEE Dreaming dataset.

Histopathology image classification for cancer diagnosis
- Conducted comparative analysis between **CNNs & Vision Transformers**, fine-tuned through transfer learning & data augmentation; achieved **99% accuracy** on LC25000 dataset using **API-Net and Swin-Transformers**.

Experience

Marqeta | *Software Engineer Intern | Global Risk Products*   **Oakland, CA | Jun 2024 – Sep 2024**
- Boosted observability and traceability of high-traffic 3DS services in payment security, **reducing root-cause analysis time by 80%** for high-severity issues through structured logging and custom metrics integration with Datadog.

Grab | *Software Engineer | Digibank, Compliance*   **Bangalore, India | Mar 2022 – Jun 2023**
- Designed and implemented an instant KYC pipeline for Singapore ID verification, utilizing automated text extraction and face matching to cut onboarding time from **3 days to under 2 minutes.**
- Engineered a modular workflow engine with a **Golang-based state machine** to streamline multi-step data flow and integrate seamlessly with Indonesian credit bureaus and telco providers for the Loan Origination System.
- Architected a **scheduler library in Golang** to enable event-driven automation across multiple compliance use cases.

Paytm Money | *Software Engineer | Payments*   **Bangalore, India | Jan 2021 – Oct 2021**
- Developed numerous distributed & scalable features within core payments service, effectively managing **50,000 transactions per day** across diverse financial products including Mutual Funds, Equities & EdTech.
- Enhanced fault tolerance and resilience of critical systems by implementing the circuit breaker pattern with Hystrix, achieving **99.9% system availability** and minimizing service disruptions during failures.
- Upgraded Mutual Funds end-to-end payment flow, **reducing API latencies by 10x** with DB query enhancements.

Goldman Sachs | *Software Engineer (Analyst) | Securities*   **Bangalore, India | May 2020 – Jul 2020**
- Part of the Systematic Market Making - Execution Services team in FICC E-Trading division which worked with electronic market making and algorithmic execution to ensure optimal market access for clients.

Citibank | *Software Engineer (Analyst) | Equity Trading*   **Pune, India | Aug 2018 – May 2020**
- Built low latency Java applications using (openHFT) Chronicle based framework achieving **microsecond latency** for in-house High Frequency Trading applications connecting to Hong Kong Futures Exchange.
- Developed a dynamic PDF generator application leveraging **Spring Boot & Microservices** architecture to automate client onboarding processes; improved development process by introducing **agile & CI-CD** practices.