# ANWESH MOHANTY

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## Education

**University of California, San Diego** — San Diego, USA
Master of Science student in Computer Science and Engineering Department | GPA: **4.0/4.0** — Sept 2023 - June 2025

**Indian Institute of Technology Bombay** — Mumbai, India
Bachelor of Technology in Electrical Engineering with Honors | Major GPA: **9.57/10** — July 2017 - June 2021
Minor in Computer Science and Engineering

## Technical Skills

**Programming** Python (PyTorch, NumPy, Scikit-learn, TensorFlow, OpenCV), C/C++, MATLAB, Java, Unity Scripts, VHDL, HTML
**Software Tools** Git, Docker, VS Code, Linux, Arduino, LaTeX, AutoCAD, SolidWorks, GNU Plot, ngSpice, Quartus, Unity Engine

## Professional Experience

**Samsung Research Institute Bangalore (SRIB)** — Bangalore, India
Senior Computer Vision Research Engineer — June 2021 - Sept 2023

- Developed on-device neural network solutions for real-time Auto-Focus, Auto-Framing and Scene Recognition camera features deployed in Samsung's flagship products, which enables over 400 million users to click high-quality photographs
- Built a Dynamic Wasserstein Distance-based label assignment strategy to enhance tiny object detection by 8% mAP and 6% mIoU
- Deployed an inference engine using C++ and Java to run deep learning models within 10ms for real-time camera applications
- Incorporated teacher-student learning paradigm in model training to improve model precision by 5% and recall by 3%

**Nemati Lab @ UCSD** — San Diego, USA
Graduate Student Researcher — Sept 2023 - Present

- Adapting Microsoft Phi-2 (2.7B) and Meditron (7B) LLMs for real-time disease diagnosis, leveraging medical records and reports
- Using supervised fine-tuning and direct preference optimization (DPO) for targeted training and alignment with human preferences
- Integrated temporal cross-attention in COMPOSER sepsis prediction model to boost AUC by 4% and reduce false positives by 17%

**Indian Institute of Technology Bombay** — Mumbai, India
Research Intern under Prof. Biplab Banerjee — June 2020 - May 2021

- Proposed and engineered an end-to-end trainable model, SSMTReID-Net, to tackle the novel problem of person re-identification across multiple domains, given a single labeled source dataset and multiple unlabeled target datasets
- Defined serial and parallel multi-target adaptation paradigms for single-target state-of-the-art DA methods for baselines
- Yielded an average 9% mAP and 13% top-1 score boost with SSMTReID-Net in benchmark tests on person reID datasets

**University of Tübingen** — Tübingen, Germany
Research Intern under Prof. Oliver Bringmann — April 2020 - July 2020

- Architected SincNet for small-footprint keyword spotting on Google's Speech Commands Dataset, which has 100k+ samples
- Achieved 2-3% accuracy improvement over the state-of-the-art TC-RESNET 8 model under several different noise scenarios
- Designed an efficient batch normalization method to enhance model classification accuracy by 5-10% in unknown test conditions

## Projects

**Incremental Domain Adaptation** | Bachelor Thesis Project — June 2020 - May 2021

- Conducted an extensive literary survey on current domain adaptation (DA) methods and implemented state-of-the-art models like DANN, DADA, IADA, CUA, EWC and LWF for domain adaptation on digit, DomainNet, office-home and other such datasets

**Continual Learning for Keyword Spotting** | Automatic Speech Recognition — Jan 2021 - May 2021

- Improved old class accuracy by 30-50% through implementation of schemes like elastic weight consolidation (EWC), continual unsupervised adaptation (CUA) and learning without forgetting (LWF) for continual learning of new classes for keyword spotting

**Adversarial Attacks and Robust Transformations** | Advanced Machine Learning — June 2020 - Dec 2020

- Presented a detailed characterization of methods like K-Means, JPEG compression, Gaussian smoothing and VQVAE to minimize accuracy losses to within 5-10% in most cases with adversarial attacks like CWLA, FGSM, PGD and deep fool attack