Suvaditya Mukherjee

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Education

- **University of Southern California** — Los Angeles, CA, USA
  Master of Science - Computer Science (Artificial Intelligence); GPA: 3.5/4 — August 2024 - July 2026
  Courses: *Machine Learning, Deep Learning, Analysis of Algorithms, Advanced Computer Vision*
- **NMIMS University** — Mumbai, India
  Bachelor of Technology - Computer Science (Artificial Intelligence); GPA: 3.94/4 — August 2020 - May 2024
  Courses: *Deep Learning, Data Structures and Algorithms, Machine Learning, Natural Language Processing, Software Engineering, Operating Systems, Mathematics, Computer Organization and Architecture, Computer Networks, Database Management Systems*

Experience

- **Magnopus** — Los Angeles, CA, USA
  Engineer I, R&D - Strike Team (Full-time, Contract) — June 2025 - August 2025
  - **The Wizard of Oz - Sphere**: Helping solve broad-scale AI performance issues related to the project of releasing the original Wizard of Oz movie from 1939 at the Sphere in Las Vegas, as a collaborative project between Magnopus, Google DeepMind, Google Cloud, Warner Bros, and Sphere Studios.
  - **Video Generation using Diffusion Models**: Fine-tuning and optimizing models like Wan2.1 VACE, Hunyuan-DiT, Flux etc., to create new visual generations through tools like PyTorch and ComfyUI.
  - **LoRA Training and AI Pipeline setup**: Set up end-to-end pipelines to train LoRAs for T2I, I2I, I2V workflows for Wan2.1 VACE using proprietary image and video data.
- **USC Institute of Creative Technologies** — Los Angeles, CA, USA
  Machine Learning Student Worker - Learning Sciences Lab (Part-time) — September 2024 - Present
  - **Course Generation using Generative AI**: Leverage Generative AI with LangChain and OpenAI to help make novel methods for tutoring content generation and OpenTutor courses to teach AI for the AIRCOEE program under the US Department of Defense, with Prof. (Dr.) Benjamin Nye.
  - **Cogeneration Testbed**: Maintain technologies for co-generation of tutoring content using open and cloud-based LLMs to help educators.
- **USC School of Cinematic Arts** — Los Angeles, CA, USA
  Machine Learning Assistant - Interactive Games Division (Part-time) — September 2024 - Present
  - **Student Assistant**: Assist Prof. (Dr.) Mark Bolas to develop an introductory Python Programming course for Game Developers.
  - **ML Research**: Find new approaches to apply Generative AI to solve problems at large-scale in Creative Media, with solutions such as generating scripts and summaries based on videos.
- **HARMAN International** — Bengaluru, India
  Machine Learning Intern (Full-time) — December 2023 - May 2024
  - **K-Shot Rotation-Invariant Object Detection Pipeline Development**: Produced new Intellectual Property for a robust pipeline to perform K-shot object detection independent of rotation. Improved pipeline with 35% better results on client data
- **UnifyAI (Ivy)** — London, United Kingdom
  ML Research Engineer Intern (Full-time) — January 2023 - July 2023
  - **Demos and Examples**: Developed new demos, examples, and guides to official documentation for converting torchvision models into TFLite. Also helped in establishing programs and managing the Google Summer of Code program as an Organization Admin
  - **Internal AI Developer**: Prototyped an AI Developer (Code-LLM) to automate and build upon existing codebases, speed up internal development, along with handling MLOps through Cloud resources such as GCP and AWS

Publications and Research

- **Presentation: Pushing the Performance Envelope : An Optimization Study for 3D Generative Modelling with PyTorch**: Work on finding techniques to optimize 3D Text-to-Image Mesh generation [Accepted at PyTorch Conference 2024]
- **Project: BitNeRF**: A study on extreme quantization of Neural Radiance Fields, and effects observed against training them in distributed-training setups.
- **Paper: Guiding the Student's Learning Curve: Augmenting Knowledge Distillation with Insights from GradCAM**: Work on investigating the effects of using GradCAM representations of Teacher models as direct inputs to Student models for quicker convergence. [Accepted]
- **Paper: Project Lingua Franca: Democratizing Information through Unified Optical Character Recognition and Neural Machine Translation**: Work on combined Optical Character Recognition and Neural Machine Translation for information translation with high-impact languages as targets [Accepted]

Leadership

- **Google Developer Expert**: Recognized and selected as a top contributor to the Google ML Developer Community. Work towards creating detailed tutorials, delivering talks around Deep Learning, and helping beta-test new products on GCP Vertex AI and Gemini suite of tools.
- **Google Summer of Code**: (Org Admin and Mentor) Mentored incoming students for completing tasks, handled communications with Google Open Source Programs Office for compliance.