AVIJIT BALABANTARAY (鳳凰)

Taipei, Taiwan (+886) 910-583-031 avijitbalabantaray5@gmail.com

GitHub: github.com/aviji8 **LinkedIn:** linkedin.com/in/avijit-balabantaray-43b365163

Scan for Portfolio

EDUCATION

National Taiwan University (NTU) Taipei, Taiwan

Master of Science in Computer Science (Networking and Multimedia). 08/2025

• GPA: 3.8/4.30 | Advised by Professor Yung-Jen Hsu

Centurion University of Technology and Management (CUTM) BBSR, India

Bachelor of Science in Computer Science and Engineering 04/2020

• GPA: 8.82/10.00

Mandarin Training Center , National Taiwan Normal University (MTC, NTNU) Taipei, Taiwan

Mandarin Chinese Language Program 09/2025 - 02/2026

WORK EXPERIENCE

XRSPACE Taipei, Taiwan | 08/2024 – 06/2026

AI/ML Engineer Intern [PyTorch, LLM, RAG, vLLM, 3DGS]

- R&D on fine-tuned AI Agents (Multimodal RAG, Knowledge Graphs, Synthetic Data) integrated with 3D Gaussian Splatting for advanced 3D scene editing.

Most GASE (NTNU) Taipei, Taiwan | 06/2019 - 08/2019

Robotics Intern [ROS, OpenCV]

- Developed a smart visual tracking system on the humanoid robot THORMANG3, enabling autonomous arm operation based on target tracking.

RESEARCH & PROJECTS

Entity2Intent(Master's Thesis) [LLM, Classification, Reasoning] 11/2024 - 7/2025

- Proposed a novel two-stage framework that performs structured entity-based reasoning for accurate intent classification.
- Surpassed **SOTA by +4.04%** (Llama-2-70B) and **+0.51%** (GPT-3.5) on intent classification with minimal API costs, solving accuracy degradation from 93% to 54% as labels scale to 60.

Native-Accent Text-to-Speech [TTS, Speech Synthesis, Voice Cloning] 06/2026 - Present

- Improving native-sounding TTS for non-English languages with regional accents that vary by location.

2D-3D Human Pose Estimation [Transformer & Keypoint Detection] 03/2023 - 08/2024

- Optimized 3D human pose selection from multi-hypothesis predictions derived from 2D keypoints.

Delivery Robot for Quarantine Center [Robotics & CV] 09/2021 - 02/2022

- Developed a mobile robot for contactless delivery with indoor route planning and gesture-based human interaction using computer vision.

PUBLISHED WORKS AND PATENTS

- Paired-EMS: Enhancing Electrical Muscle Stimulation (EMS)-based Force Feedback Experience by Stimulating Both Muscles in Antagonistic Pairs **-CHI 2024**
- MFEMANet: an effective disaster image classification approach for practical risk assessment -Machine Vision & Applications 2023
- Multi-level Security and Detection System to Avert Elephant Accident at Railway Track. **-IP India**

AI HACKATHONS

NVIDIA NemoClaw Hackathon 05/2026

- Developed an AI-driven influencer discovery agent for targeted digital marketing and advertising campaigns.

IKIGAI OpenAI Codex Hackathon [Finalist] 06/2026

- Brainy: A personalised AI agent tracks posture and blink rate to suggest healthier work habits.

SKILLS

- **AI/ML:** LLM, MLLM, MCP, RAG, SFT, RLHF, Model Evaluations (F1 Score, Precision, Recall, Accuracy, MPJPE, PCK)
- **Frameworks & Libraries:** HuggingFace Transformers, Langchain, ChromaDB, PyTorch, OpenCV
- **Tools & Deployment:** Docker, FastAPI, GitHub, vLLM, Data Pipelines