SUDIPTA ROY

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EDUCATION

Yunnan University **Yunnan, China**

Bachelor's in Software Engineering *Expected Graduation, July 2028*

- **Concentrations:** Intelligence and Modeling/Simulations, Full Stack Development

RELEVENT COURSEWORK

• Data Structures	• Algorithms Analysis	• Artificial Intelligence	• Systems Programming
• Software Methodology	• Database Management	• Internet Technology	• Computer Architecture

EXPERIENCE

Automated Multimodal Depression Detection |*Python, Pytorch* **Yunnan, China**

Research Assistant at Artificial Intelligence Key Laboratory, Yunnan University *Oct 2024 – Present*

- Debugged and refactored the existing codebase for modularity and efficient handling of large multimodal datasets.
- Improved and tested the STE-Mamba depression detection framework (facial video + physiological signals).
- Experimented with neural architectures, attention mechanisms, and custom loss functions.

Multimodal EEG→Image Generation |*Python, Pytorch, Adam optimizer, Cosine Annealing LR* **Remote**

Independent ML Engineer(Brain to Image Generation via EEG Feature Mapping and Diffusion Models) *Jan 2024 – Sep 2025*

- Built an end-to-end pipeline that translates EEG signals into visual dream renderings by mapping EEG features into CLIP text space and rendering with SDXL.
- Engineered robust EEG preprocessing (band-pass, 50/60 Hz notch, ICA artifact removal) and feature extraction (spectral bands, Hjorth parameters, connectivity metrics) using MNE.
- Shipped reproducible tooling and inference runner, added checkpoints, resume logic, and structured logs for reliable experimentation.

PROJECTS

Problem Solver | *React, TypeScript, Tailwind CSS, Zustand, Supabase, Framer Motion, Three.js* **Yunnan, China**

Founder & Developer *Jun 2024 – Sep 2024*

- Built an offline-first Progressive Web Application (React + TypeScript, Tailwind) with Supabase (Auth, Postgres+PostGIS, Realtime) for reporting, mapping, and tracking neighborhood issues.
- Integrated LLM agents to auto-categorize issues and propose solutions, reducing manual triage and accelerating prioritization; added analytics to measure resolution time and community engagement.

Mental Health Checkup Platform | *React 18, TypeScript, Tailwind CSS, Three.js, Framer Motion, Supabase* **Yunnan, China**

Creator & Developer *Nov 2014 – Feb 2025*

- Created an AI-driven mental health platform that combines structured health assessments with emotion-aware chat support, helping students track wellbeing and access contextual guidance.
- Integrated LLM agents for intelligent, empathetic responses, enabling scalable early intervention and improving accessibility to mental health support.
- Designed a resource center with curated articles, videos, and helpline links, empowering users to take informed action and strengthening support networks.

ACTIVITIES AND LEADERSHIP

Programming Club of Yunnan University **Yunnan, China**

- Contributed to coding competitions and projects to strengthen the student developer community**.** *Aug 2024– Current*

Project Showcase **Yunnan, China**

- WoChuang Jacaranda Cup Youth Entrepreneurship and Innovation Competition (Third Place). *Apr 2025*

PROFESSIONAL SKILLS

Programming Languages: Python, Java, C, HTML/CSS
Natural Language Processing: Transformers, Hugging Face, BERT, LLMa, Mistral
AI/ML Tools: Ollama, PyTorch, Scikit-learn, LangChain/LangGraph, Pydantic-AI, Qwen Agent
Web Technologies: React.Js , Django, FastAPI, HTML, CSS
Backend: PostgreSQL, Node.js, Supabase,
Cloud & DevOps: Git, GitHub, Google Cloud
Tools: VS Code, Android Studio, IntelliJ, PyCharm, Eclipse, AWS, Jupyter Notebooks, Git.

ADDITIONAL INFORMATION

Languages: • Bangla *(Native)* • English *(Fluent)* • Mandarin Chinese *(Proficient)* • Hindi &Urdu *(Spoken Fluency)*
Soft Skills : • Team Leadership • Client Relations • Active Listening • Cross-Cultural Communication