

# Matthew He

Hello, I am Matthew, currently enrolled in an Interdisciplinary Program at National Tsing Hua University, focusing on courses from both the Computer Science and Power Mechanical Engineering departments. I am currently participating in an exchange program at UC Berkeley's Computer Science department, where I developed a deep interest in algorithms and AI and actively engaged in hands-on learning.



[Gmail](#) / [Github](#) / [LinkedIn](#)

## Research



### Participate in National Tsing Hua University CVLab

(Undergrad Research Assistant)

Jan 2025 - Present

- Computer Vision.
- Utilizing 3D Gaussian Splatting for real-time image simulation and 3D scene reconstruction, enhancing rendering efficiency and geometric accuracy.



### Participate in Computational Neuroergonomics and Neuroeducation Lab (CNELAB)

(Undergrad Research Assistant)

Aug 2023 - Dec 2024

- Designed and programmed a frequency flashing device using Arduino UNO R3 connected to 9-LED array.
- Conducted EEG signal acquisition using a 32-channel wireless EEG cap.
- Employed advanced signal processing methods, including CNN, CCA, SCCA, and ETRCA.
- Implemented machine learning algorithms (SVM, Random Forest) to validate and enhance prediction accuracy.

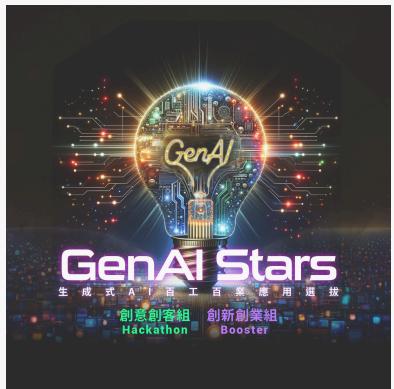
## Projects



### AI Cup Hackathon

Oct 2024 - Nov 2024

- Achieved 7th place out of 487 teams in the competition.
- Applied OCR to extract text from images and generate embeddings for analysis.
- Integrated ChatGPT, Gemini, Claude, and Llama APIs to process embeddings and retrieve optimal answers.
- Fine-tuned models to ensure accurate, AI-driven responses from image-based data.



### 2024 GenAI Stars Hackathon

May 2024 - July 2024

- Utilized Yolo V8 for player detection and Sklearn Kmeans for team classification.
- Applied OpenAI Whisper for audio-to-text conversion and GPT-4 for text summarization.
- Integrated video processing and AI-driven insights into a Flutter-based application.

## Skills

**Software:** Python, C++, HTML, CSS, Flutter, Node.js, LLMs

**Languages:** Mandarin, English