Hua Chen Shih

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Highly motivated Intelligent Manufacturing M.S. student specializing in GenAI, ML and Web.
Proven experience developing full-stack AI Agents (TSMC) and deploying LLM applications (ITRI).
NVIDIA CUDA and GCP Vertex AI certified.

Education

National Taiwan University of Science and Technology   Aug 2024 – **Present**
M.S. in Intelligent Manufacturing Technology

National Sun Yat-sen University   Sep 2020 – Jun 2024
B.I.S. in Interdisciplinary Studies

Work Experience

Manufacturing Technology R&D Intern   Jul 2025 – Aug 2025
Taiwan Semiconductor Manufacturing Company – Hsinchu, Taiwan

- Developed a full-stack AI Agent at the Intelligent Manufacturing Center to provide engineers with FDC Alarm SOPs within 90 seconds.
- Boosted FDC alarm resolution efficiency by over 70% in the FAB.
- Improved the output accuracy of an SQL-to-Java Agent from 40% to 100%.

Digital Innovation and Operations Intern   Jul 2024 – Aug 2024
Industrial Technology Research Institute – Hsinchu, Taiwan

- Developed an AI-powered news summarization service for ITRI's IEK website using ML and LLM models.
- Deployed a Llama 3 on H100 servers and developed the full-stack (Flask backend) solution.

Web Development Engineer (Freelance)   Jan 2021 – Oct 2025
National Sun Yat-sen University – Kaohsiung, Taiwan

- Designed and managed websites for multiple departments, enhancing UX/UI and SEO.
- Developed an online course selection guide, attracting over 3,500 users within two weeks.

Other Experience

Public Relations and Marketing Manager   Aug 2025 – **Present**
Artificial Intelligence Club, National Taiwan University – Taipei, Taiwan

- Successfully led a Q4 2025 Business Development initiative, fostering collaborations between AI talents and three tech companies: MediaTek, ASUS, and Cake.
- Designed the NTUAI CIS and led the marketing strategy, resulting in a 44.6% increase in Instagram followers within two months.
- Led and developed the "NTUAI Agent" project, an automated chatbot handling member inquiries across Discord, Messenger. Architected the agent using LangGraph and Gemini, integrate MCP to connect dual tools for course database and RAG system.
- Contributed to the "skinGPT" project, integrating YOLO v11 and OpenAI APIs, and deploying the web service to Google Cloud Platform (Cloud Run).

Research Student   Sep 2024 – **Present**
Intelligent Sensing & Digital Manufacturing Lab, NTU – Taipei, Taiwan

- Graduate researcher (advised by Prof. Wen-Yuh Jywe) dedicated to combining Agentic AI with sustainable manufacturing to solve practical problems in Taiwan's manufacturing industry.

Research Student   Nov 2020 – Jun 2024
Sustainable Innovative Laboratory, NSYSU – Kaohsiung, Taiwan

- Researcher at the Laboratory (Department of Mechanical Engineering), led by Professor Cheng-Jung Yang.
- Primarily researched the health and environmental impacts of using virgin vs. recycled materials in Fused Deposition Modeling (FDM).

Awards & Honors

IMC DAY AI Competition – Bronze Award   Nov 2024
Taiwan Semiconductor Manufacturing Company

- Project: "EcoPrompt Framework: An Intelligent Assistant for Sustainable Manufacturing."
- Proposed a novel prompt engineering framework enabling LLMs to integrate diverse data and utilize Chain-of-Thought (CoT) to address manufacturing sustainability challenges.

Introduction to Semiconductor Intelligent Manufacturing – 1st Place & People's Choice   Dec 2024
National Taiwan University

- Project: "Intelligent Factory Automated Material Handling System Based on Digital Twin and Reinforcement Learning."
- For a course co-developed with TSMC, proposed a concept to optimize AMHS scheduling by integrating Reinforcement Learning (Q-learning) within a Digital Twin framework.

3D Scan Application Competition – Excellent   Jan 2021
Road Ahead Technologies Consultant Corp.

- Project: "Efficiency Measurement and Comparison of Biomimetic Drone Blade Design."
- Applied biomimicry and the Taguchi method to investigate and optimize drone blade design parameters for improved lift efficiency.

Publications

Yang, C.J., **Shih, H.C.**, & de Ancos, T. (2024). Comparison of human health, energy consumption, and carbon emission with virgin and recycled filament in Fused deposition modeling printing. Materials Today Sustainability, 25.

Huang, C.C., **Shih, H.C.**, de Ancos, T., & Yang, C.J. (2023). The transformation of 3D printing parameters under sustainable manufacturing. System Innovation for a World in Transition (IEEE-ICASI).

Shih, H.C., & Yang, C.J. (2023). Recycled filament for sustainable manufacturing of fused deposition modeling. Sustainable Energy and Green Technology Conference.

Certifications

Sustainable Engineer Certificate · Chinese Institute of Industrial Engineers   2025

Fundamentals of Accelerated Computing with CUDA C/C++ · NVIDIA   2024

GCP Vertex AI Certified · Google   2024

Skills

Programming: Python, C++, C, JavaScript
AI/ML: Generative AI, Agentic AI, LLMs, LangGraph, RAG, Hybrid Search
DevOps/MLOps: CI/CD, Docker, GitHub, Flask, GCP
Other: SEO, Google Analytics, LCSA, FDM

施驊宸 (Hua Chen Shih)

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熱於探索跨領域科技的智慧製造碩士生，專精於生成式 AI、機器學習與網頁開發。
具備開發全端 AI 助理 (TSMC) 與部署大型語言模型應用 (ITRI) 的實習經驗。
通過 NVIDIA CUDA 與 GCP Vertex AI 認證。

教育背景

國立臺灣科技大學　　　　　　　　　　　　　　　　　　　　　　　Sep 2024 – **Present**
智慧製造科技研究所 碩士 (M.S.)

國立中山大學　　　　　　　　　　　　　　　　　　　　　　　Sep 2020 – Jun 2024
人文暨科技跨領域學士學位學程 學士 (B.I.S.)

工作經歷

製造技術研發部 (MTRD) 實習生　　　　　　　　　　　　　　　Jul 2025 – Aug 2025
臺灣積體電路製造股份有限公司 – 新竹, 臺灣.

- 了解 FAB 使用者需求並開發全端 AI Agent，可在 90 秒內為設備工程師提供 FDC Alarm SOPs，效率提升 70% 以上。
- 將 SQL-to-Java Agent 的輸出正確率從 40% 提升至 100%。

平台創新與營運部 實習生　　　　　　　　　　　　　　　　　Jul 2024 – Aug 2024
工業技術研究院 – 新竹, 臺灣.

- 使用機器學習 (ML) 和大型語言模型 (LLM) 為 ITRI 的 IEK 新聞網站開發 AI 重點新聞摘要功能。
- 在 H100 上部署 Llama 3 大型語言模型，並開發全端 (Flask 後端) 解決方案。

網頁開發 工程師 (自由接案)　　　　　　　　　　　　　　　　Jan 2021 – Oct 2025
國立中山大學 – 高雄, 臺灣.

- 為多個系所設計和管理網站，強化使用者體驗 (UX/UI) 和搜尋引擎優化 (SEO)。
- 開發選課指南網站，兩週內吸引超過 3,500 名使用者。

其他經歷

公關行銷部 部長　　　　　　　　　　　　　　　　　　　　　Aug 2025 – **Present**
國立臺灣大學 人工智慧應用社 – 臺北, 臺灣.

- 成功主導 2025 年 Q4 的商業開發計畫，促使 AI 人才與頂尖科技公司 (聯發科、華碩、Cake) 建立合作與交流。
- 設計 NTUAI 企業識別系統 (CIS) 並主導行銷策略，Instagram 追蹤者兩個月內提升 44.6%。
- 主導並開發「NTUAI Agent」專案：一個全自動回覆助理，使用 LangGraph 和 Gemini 架構，並透過 MCP 串接課程資料庫與 RAG 系統。
- 開發皮膚檢測 Chatbot「skinGPT」，整合機器學習模型和 OpenAI API，並將網頁服務部署至 Google Cloud Platform (GCP)。

智慧感測與數位製造實驗室 研究生　　　　　　　　　　　　　Sep 2024 – **Present**
覺文郁 教授, 國立臺灣大學 – 臺北, 臺灣.

- 研究結合 Agentic AI 與永續製造，以解決臺灣製造業的實務問題。

永續創新實驗室 實驗研究生　　　　　　　　　　　　　　　　Nov 2020 – Jun 2024
楊政融 教授, 國立中山大學 – 高雄, 臺灣.

- 主要研究 FDM (熔融沉積成型) 中，使用一次材與二次材對人體健康及環境的影響。

獎項榮譽

IMC DAY AI 競賽 – 銅獎   Nov 2024
臺灣積體電路製造股份有限公司

- 專案：「EcoPrompt 框架：製造業邁向永續的智慧助手」。
- 提出一創新的提示工程框架，使大型語言模型 (LLM) 能整合多元數據並利用思維鏈 (CoT) 來應對製造業的永續挑戰。

半導體智慧製造概論 – 第一名 & 人氣獎   Dec 2024
國立臺灣大學

- 專案：「基於數位雙生與強化學習的智慧工廠自動化物料搬運系統 (AMHS)」。
- 於 TSMC 合開課程中，提出將強化學習 (Q-learning) 整合至數位雙生框架中的構想，以優化 AMHS 排程。

3D 量測技術應用大賽 – 優等獎   Jan 2021
馬路科技顧問股份有限公司

- 專案：「無人機仿生葉片設計之效率量測與比對」。
- 應用仿生學與田口實驗方法來探討並優化無人機葉片設計參數，以提升升力效率。

研究發表

Yang, C.J., **Shih, H.C.**, & de Ancos, T. (2024). Comparison of human health, energy consumption, and carbon emission with virgin and recycled filament in Fused deposition modeling printing. Materials Today Sustainability, 25.

Huang, C.C., **Shih, H.C.**, de Ancos, T., & Yang, C.J. (2023). The transformation of 3D printing parameters under sustainable manufacturing. System Innovation for a World in Transition (IEEE-ICASI).

Shih, H.C., & Yang, C.J. (2023). Recycled filament for sustainable manufacturing of fused deposition modeling. Sustainable Energy and Green Technology Conference.

專業認證

永續工程師證書 · 中國工業工程學會   2025

Fundamentals of Accelerated Computing with CUDA C/C++ · NVIDIA   2024

GCP Vertex AI Certified · Google   2024

專業技能

程式能力: Python, C++, C, JavaScript
AI/ML: Generative AI, Agentic AI, LLMs, LangGraph, RAG, Hybrid Search
DevOps/MLOps: CI/CD, Docker, GitHub, Flask, GCP
其他: SEO, Google Analytics, LCSA, FDM