

# Yu-Sheng (Adam) Tang

Generative AI Engineer, Data Scientist | 8+ Years Building AI, Data & Software Products, Taipei, Taiwan

+886 927-878-287 | ✉ yushengtang1993@gmail.com | 🌐 adam951502 | in yu-sheng-tang | 🏠 adam951502.github.io

## Education

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|------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------|
| <b>University of Freiburg</b>                        | <b>Germany</b> | <b>Oct 2018 - Feb 2021</b>                                                                        |
| Master of Science in Sustainable Systems Engineering |                | German Grade: 1.7 (1.0 = best), GPA: 3.6/4.0                                                      |
| <b>Chang Gung University</b>                         | <b>Taiwan</b>  | <b>Sep 2012 - Jun 2016</b>                                                                        |
| Bachelor of Science in Mechanical Engineering        |                | German Grade: 1.3 (1.0 = best), GPA: 3.8/4.0<br>* Dean's list Award: Feb 2014, Sep 2014, Feb 2015 |

## Skills

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| <b>Programming:</b> Python, MATLAB, Bash, LaTeX                                                    | <b>LLMs &amp; RAG:</b> Ollama (Llama 3, DeepSeek), Open WebUI, LangChain, LangGraph, Chainlit                           |
| <b>DBMS:</b> PostgreSQL, MySQL, GraphDB (SPARQL), Neo4j                                            | <b>Management:</b> Jira & Confluence (admin, maintainer), project management, agile management, requirement engineering |
| <b>Web:</b> HTML/CSS, JavaScript, Bootstrap, Flask, RESTful APIs, Swagger, JWT                     | <b>Certificates:</b> IBM Data Science Professional Certificate, International Requirement Engineering                   |
| <b>Data Skills:</b> ETL, data wrangling, web scraper, web crawling, data warehousing, data catalog | <b>Languages:</b> Mandarin, English, German                                                                             |
| <b>Tools &amp; Techs:</b> PyPI, pip, git, pgAdmin 4, International Data Space                      |                                                                                                                         |
| <b>DevOps:</b> CI/CD (GitHub, GitLab), AWS, Jenkins, Pytest, Docker, uWSGI, NGINX                  |                                                                                                                         |

## Experience

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| <b>Generative AI Engineer   Fraunhofer EMI   🇩🇪 Germany</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Oct 2021 - Oct 2025</b> |
| <b>Technical Skills:</b> <ul style="list-style-type: none"><li>Designed an ontology for over 3,000 datasets and built a knowledge graph (KG) for material life cycle assessment (LCA) of additive manufacturing processes using Python and SPARQL, enhancing data pipeline, analysis, and query capabilities by 50%.</li><li>Constructed an efficient ETL data pipeline in Python, significantly enhancing efficiency by 80%.</li><li>Established a Python package and RESTful APIs (Flask) to streamline data processing, enhancing productivity and code reusability by 90%.</li><li>Established microservices backend APIs using Flask, uWSGI, NGINX, and Docker, reducing deployment time by 80%.</li><li>Implemented DevOps and CI/CD pipeline for automated testing, release, and deployment, enhancing code quality and project efficiency in GitLab by 40%.</li><li>Established a complete ETL pipeline for the public health database using PostgreSQL, pgAdmin4, GraphDB, Flask, uWSGI, NGINX, and Docker, improving data accessibility by 80%.</li><li>Developed a RAG architecture application using Ollama, Chainlit, and Docker to reduce LLM hallucinations by integrating a knowledge base with LLM-generated responses for greater accuracy and reliability.</li></ul> |                            |
| <b>Project Management:</b> <ul style="list-style-type: none"><li>Supervised a master's student, providing guidance throughout the course of the master project (with German Grade: 1.0) - <i>Designing An Automated Metadata Extraction Pipeline: Bridging the Gap Between Data Collection and Unified Graph-Based Metadata Representation</i>, resulting in an 85% completion rate.</li><li>Supervised 2 students in establishing an ETL pipeline for a comprehensive metadata graph that describes heterogeneous data from various sources, achieving a 90% increase in data processing efficiency.</li><li>Developed a universal use-case guideline and template, significantly enhancing the efficiency and quality of software development processes within the HERAKLION project, leading to a 30% improvement in project delivery times.</li><li>Managed requirements (requirement engineering), agile project management cycle, and project execution for a team of more than 20 people using Jira, streamlining workflows and improving efficiency by 35%.</li></ul>                                                                                                                                                                                                           |                            |

## Projects

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| <b>Production Planning Copilot</b>                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Nov 2025 - Present</b>  |
| <b>Tech Stack:</b> RAG, LLMs, LangChain, Chainlit, FastAPI, PostgreSQL, vector database, knowledge graph, Docker, Python <ul style="list-style-type: none"><li>Developed an on-premises Graph Retrieval-Augmented Generation (RAG) assistant that transforms product specifications into optimized production plans, grounding responses in documents, production data, and domain knowledge with validation guardrails for accuracy and reliability.</li></ul>          |                            |
| <b>Automotive FEM Simulation Assistant Copilot for R&amp;D</b>                                                                                                                                                                                                                                                                                                                                                                                                           | <b>May 2024 - Oct 2025</b> |
| <b>Tech Stack:</b> LLMs (on-premises models), Chainlit, RAG, Docker, Python, vector database, knowledge graph, Flask <ul style="list-style-type: none"><li>Developed an on-premises Graph Retrieval-Augmented Generation (RAG) system to minimize LLM hallucinations by integrating document, data, and metadata retrieval from a domain-specific knowledge base with AI-generated responses, ensuring higher accuracy, contextual relevance, and reliability.</li></ul> |                            |
| <b>HERAKLION</b> 🏆 - <i>Heuristic Resilience Analyses for Municipalities Using Data Space Functionalities</i>                                                                                                                                                                                                                                                                                                                                                            | <b>Mar 2022 - Oct 2025</b> |
| <b>Tech Stack:</b> pip, git, CI/CD, DevOps, ETL, RESTful API, Python, py-library, Flask, Docker, KG, requirement engineering, agile management, RAG <ul style="list-style-type: none"><li>Developed a scalable resilience data space demonstrator to improve crisis data accessibility and usability for German municipalities and emergency services, facilitating timely and informed decision-making.</li></ul>                                                       |                            |
| <b>ADAM-SusTrace</b> - <i>Networking of digital assets and data-driven value creation through data ecosystems in additive manufacturing</i>                                                                                                                                                                                                                                                                                                                              | <b>Oct 2021 - Feb 2022</b> |
| <b>Tech Stack:</b> git, Python, algorithm, data structure, Ontology, knowledge graph, LCA <ul style="list-style-type: none"><li>Applied digital traceability in additive manufacturing to conduct comprehensive sustainability analyses (Life Cycle Assessment, LCA). Assisted in developing tools and workflows, enhancing data ecosystem's value, and facilitating detailed understanding of product/process sustainability.</li></ul>                                 |                            |