Po-Yen Chen

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PROJECTS & RESEARCH EXPERIENCES

Institute for Anthropogenic Material Cycles @ RWTH
Master Thesis Student — *Oct 2024 - Mar 2025, Aachen*

Determination of Particle Size Distributions Using a YOLO-Based Instance Segmentation Approach
- Achieved significant time savings by replacing traditional manual waste sorting methods; reduced processing time from 1 day to under 1 hour.
- Developed a real-time pipeline combining YOLO-based instance segmentation and machine learning (ML) regression to predict material weight distributions.
- Built interactive dashboards using Plotly Dash to visualize model predictions and facilitate stakeholder access.

Porsche Digital GmbH
Hackathon Participant — *Oct 2024 - Jan 2025, Stuttgart*

Vehicle Recommendation System
- Built a chatbot app using Streamlit to recommend potential customers interested in Porsche vehicles.
- Customized a text embedding model using both Retrieval-Augmented Generation (RAG) and fine-tuning large language model (LLM) approaches to deliver truly and insightful refined customer data.
- Hand-on experience on AWS cloud platform, Bedrocks, to implement RAG approach

Infineon Technologies
Hackathon Participant — *May 2024, Aachen*

Improving Customer Experience with Generative AI
- Web-scraped customer queries from the service website, designed the application integrating the LLM model, and performed prompt engineering to enhance the quality of online customer service.

Department PGI-1 @ Jülich Research Center
Lab Participant — *Nov 2022 - Feb 2023, Aachen*

Machine Learning Applied on Quantum Mechanical Simulation
- Built ML pipelines using AiiDA framework to predict material properties, applying kernel ridge regression with structural descriptors on 1,730 topological insulator structures to establish structureproperty relationships for efficient magnetic property prediction.

CTCI
I&CS Engineer — *Apr 2019 - Mar 2020, Taipei*

Instrumentation & Control System Material and Quantity Take-Off
- Automated material and quantity take-off processes using VBA, significantly improving engineering efficiency.
- Designed and organized instrumentation and PLC control system layouts through cross-departmental collaboration.

EXTRACURRICULAR

Taiwan Studentenverein Aachen e.V.
Event Organizer — *Apr 2023 - Present, Aachen*

Web Maintenance
- Managed and analyzed membership website data to improve efficiency and speed up government funding applications.
- Built websites and registration forms to support event initiatives, attracting local students and enhancing online visibility.

SUMMARY

- Masters graduate with **3+ years of experience in software development, data science and ML**, including building model pipelines, developing object detection systems, and applying LLM.
- Skilled in SQL for handling large datasets and **experienced with cloud and automation tools**.
- Possesses a **strong interdisciplinary background combining data specialization and computational engineering**.

SKILLS

Back-End	Python, C, Java, Matlab
Front-End	HTML, CSS, JavaScript
ML	PyTorch, Tensorflow
DBMS	MySQL
DevOps	Docker, Git
OS	macOS, Linux
Cloud Platform	AWS, GCP
Soft Skills	Resilience, Team-Oriented

EDUCATION

RWTH University, Germany — Oct 2021 - Mar 2025
M.Sc. in Simulation Sciences

National Cheng Kung University (NCKU), Taiwan — Sept 2014 - Jun 2018
B.Sc. in Chemical Engineering

CERTIFICATE

GCP Foundation
Google

Data Engineering Specialization
DeepLearning.AI and AWS

Algorithm Specialization
Stanford Online

LANGUAGES

- English (Fluent)
- German (Conversational)
- Mandarin (Native)

INTERESTS

- Learning Languages
- Traveling