

Yu-Sheng (Adam) Tang

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Education

University of Freiburg, Germany

Master of Science in Sustainable Systems Engineering

Oct 2018 - Feb 2021

German Grade: 1.7, GPA: 3.6/4.0

Chang Gung University, Taiwan

Bachelor of Science in Mechanical Engineering

Sep 2012 - Jun 2016

German Grade: 1.3, GPA: 3.8/4.0

Skills

Languages: Python, MATLAB, HTML/CSS, JavaScript, C++, Bash, LaTeX

Databases: MySQL (SQL), GraphDB (SPARQL)

Frameworks: Flask, PyTorch, Pytest, Bootstrap

Data Skills: ETL pipeline, RESTful API, data wrangling, web scraper, web crawling, data warehousing, DevOps

Tools & Techs: pip, Git, GitHub (Action), GitLab (CI/CD), Docker, AWS

Management: Jira (administrator), project management, agile management, requirement engineering

Certificate: IBM Data Science Professional Certificate, International Requirement Engineering

Experience

Data Scientist | Fraunhofer EMI | Germany

Oct 2021 - Present

Technique:

- Built an ontology for semantic data structure by using RDF, OWL and other ontologies
- Established a knowledge graph for material life cycle assessment of additive manufacturing process
- Analyzed queried data from SPARQL in Python
- Built data ETL pipeline in Python
- Bridged database APIs and parsed data in Python

Management:

- Lead a master student
- Applied agile project management
- Generated generic use-case guideline of UML diagram and use-case description template to improve the efficiency and quality of software development processes
- Monitored and planned requirements engineering cycles
- Applied project management, particularly agile management, and requirements management in management software using Jira

Research Assistant | Fraunhofer EMI | Germany

May 2020 - Sep 2021

- Modeling the impact failure (delamination) of different configurations of CFRP under various scenarios in LS-DYNA
- Modeled the failure of a single-lap hybrid joint (AI-CFRP) under tensile loading with LS-DYNA
- Calculated required numerical parameters, and analyzed simulated results and built data visualization with Python

Research Assistant | INATECH | Germany

May 2020 - Dec 2020

Simulation:

- Built numerical models of small-scale pivot specimens for torsion tests using LS-Dyna software.
- Analyzed simulated results and developed data visualizations with Python to aid in interpretation of the results.

Experiment:

- Conducted cyclic stress (fatigue) loading for small-scale material characterization experiments.
- Controlled stepper motors using Python to implement cycling loading and optimized the sleeping time by considering signal frequency, rotation speed, and gear ratio.
- Assembled required components in the experimental setup through soldering.
- Analyzed signals and developed data visualizations with Python to enhance the interpretation of the results.

Projects

HERAKLION

Mar 2022 – Present

Heuristic Resilience Analyses for Municipalities Using Data Space Functionalities

Tech Stack: pip, git, CI/CD, Ontology, knowledge graph, algorithm, python, requirement engineering, agile management

- Our objective is to improve the accessibility and usability of crisis preparation and management data for municipalities and emergency forces. By creating an "ecosystem" for data, we aim to establish a model that can be used throughout Germany to quickly identify and manage crises. To achieve this, we are developing a demonstrator for a scalable resilience data space that incorporates the needs of users and implements them conceptually. Our goal is to ensure that all stakeholders have access to critical information during a crisis to enable effective and timely responses.

ADAM-SusTrace

Oct 2021 - Feb 2022

Networking of digital assets and data-driven value creation through data ecosystems in additive manufacturing

Tech Stack: git, python algorithm, Ontology, knowledge graph, LCA

- The project focuses on sustainability analysis (Life Cycle Assessment, LCA) for additive manufacturing process (AM) based on linked data and digital traceability. The goal is to provide a practical application of digital traceability for LCA of an AM product or process and to provide tools and workflows that demonstrate the added value of the data ecosystem.

Energy Market Analysis

Apr 2019 – Jul 2019

Analyzing the market value of wind and solar power for different electricity markets

Tech Stack: Python, NumPy, Pandas, Matplotlib, Scikit-learn, Energy market value

- A model was created to analyze the market value of wind and solar power in various electricity markets, including Germany, France, and Sweden. Python was used to develop the model and visualize the generated data.