Heyuan LIU

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EDUCATION

École Polytechnique **Paris, France** Sep. 2023 - Present
Master of Science and Technology Artificial Intelligence and Advanced Visual Computing

- **Coursework**: Machine and Deep Learning, Image Analysis and Computer Vision, Constraints programming, Computer Animation, Advanced Machine Learning.
- **Scholarship**: SEMG scholarship.

École Polytechnique Federal Lausanne (EPFL) **Sion, Switzerland** Mar. 2024 – Sep.2024
Exchange Master Student & Research Intern in IPESE lab

- **Coursework**: ME602 Modelling, optimization, design and analysis of integrated energy systems
- **Title for research**: Identify optimal configuration with a machine learning method in multi-criteria decision
- **Supervisor: Prof. François Maréchal**

Macau University of Science and Technology **Macau SAR, China** Sep. 2019 - Aug. 2023
Bachelor of Science in Software Engineering

- **Coursework**: OOP in Java, Algorithms, Mobile Application Development, Data Science, Artificial Intelligence, Data Structures, Software Engineering, Numerical Computation,
- **Supervisor: Prof. Rubing Huang**

WORK EXPERIENCE

EPFL IPESE lab **Sion, Switzerland** Mar. 2024 – Sep. 2024
Research Intern

Publication: ***H. Liu***, *Y. Zhao and F. Maréchal. "On the role of Artificial Intelligence in Feature oriented Multi-Criteria Decision Analysis." 35th European Symposium on Computer Aided Process Engineering - ESCAPE 35, under review, 2025.*

- Applying advanced clustering and dimensionality reduction algorithms to preprocess the datasets.
- Designing appropriate ML models to train the provided datasets and applying the trained model and deploying self-Iterative LLM to generate optimal and typical solutions from the solution sets.
- Analyzing the results and providing explanations and recommendation with a LLM decision-making assistant for any differences observed between data-driven methods and traditional weighting method.

Roland Berger **Beijing, China (Remote)** Feb. 2024 – Apr. 2024
Chatbot Engineer (PTA intern)

- Participated in the development of Chatbot for car sales.
- Used the coze and dify to create and deploy three specialized agents: Sales, After-Sales, Service.
- Ensured the responses from agent is accurate and avoid the hallucination of the Chatbots.

Volkswagen-Mobvoi information and technology **Beijing, China** June 2022 – Aug. 2022
Software Quality Intern Engineer

- Participated in the internal review, improve the quality system of company from version 2.0 to 3.0.
- Analyzed and solve 36 software quality problems in Volkswagen ID6 and Audi A6 project.

Chinese Academy of Science Software Center **Beijing, China** June 2020 – Aug. 2020
Researcher ---- Artificial intelligence and Auto driving

- Chinese Academy of Science Summer Research Camp 2020.
- Focused on the improvement of the Path Planning for Self-driving automobile.
- Best performance in optimization of Artificial Potential Field method in the Research Camp.

PROJECT

Identify optimal configuration with a machine learning method in multi-criteria decision analysis
Research Project in IPESE Lab at EPFL Mar. 2024 – Sep. 2024

- Link: https://github.com/MiSFiT5/IPESEinternship
- The work in EPFL IPESE lab for data-driven method for decision-making in MCDA.
- Including Dimension Reduction, Clustering, Deep Learning, Reinforcement Learning, LLM Chatbots.

Navi-UAV

INF581 Project in Ecole Polytechnique Jan. 2024 – Mar. 2024

- Link: https://github.com/172698691/INF581-Project
- Implemented Reinforcement Learning (DDPG) to enable UAVs to navigate in dynamic and uncertain environments efficiently.

Real-Time AI for StarCraft

INF584A in Ecole Polytechnique Jan. 2024 – Mar. 2024

- Link: https://github.com/MiSFiT5/Real-Time-AI-for-Star-Craft-Based-on-BWAPI
- Implemented strategic Game AI in StarCraft based on BWAPI.

Extractive Summarization with Discourse Graphs

INF554 course Project in Ecole Polytechnique Oct. 2023 – Dec. 2023

- Link: https://github.com/MiSFiT5/INF554_Project
- Dealed with the text and structure of conversation to determine whether it's an important one.
- Implemented GCN, GAT, GraphSAGE(selected), LSTM etc.

Vtuber-Genshin

INF573 course Project in Ecole Polytechnique Oct. 2022 – Dec. 2023

- Link: https://github.com/172698691/VTuber-Genshin
- Use the MediaPipe and Unity to implement a real-time virtual character follow the face in front of camera.

A Dynamic Detection Approach for Oscillating Loss Problem in DNN based on AUTOTRAINER

Final Year Project at MUST Sep. 2022 - May 2023

- Link: https://github.com/MiSFiT5/Dynamic-AUTOTRAINER
- A system can automatically detect and repair the bugs in Deep Learning training procedure.
- Identified the pattern of occurrence for the Oscillating loss Bug to achieve dynamic bug detection.
- it achieved over 50% reduction in time and computational resources for bug detection.
- received an "A+".

ACTIVITY EXPERIENCE

Zhejiang University SDG summer school July 2023 – Aug. 2023

Students ---- Data Visualization in school of computer science

- Follow the most advanced research paper in the area of Data Visualization.
- Data visualization practical training, project report, 48 studying hours, 3 credits.

SKILLS & INTERESTS

Technical Skills: Python (Pytorch), C/C++, Matlab, Machine Learning, Deep Learning, Chatbot Platform.
Scholarships: SEMG scholarship

Awards: National College Students E-commerce Innovation, Creativity, and Entrepreneurship Challenge (**Provincial Second Price**)

Languages: English (Fluent), Chinese/Mandarin (Native), German (Basic), French (Beginner)
Interests: Basketball, Saxophone, Dragon boat

Personal Website: **https://misfit5.github.io/**