FANGYIJIE WANG

Co. Dublin, Ireland | +353 871199381 | fangyijie.wang@ucdconnect.ie | linkedin.com/in/fangyijiewang/

A self-driven Machine Learning researcher keen to apply state-of-the-art Deep Learning algorithms to real-world computer vision applications. Interested in using AI applications to assist healthcare workers in clinical decision-making. Skilled administrator of cloud computing and state-of-the-art technology ranging from Big Data to AI. Practised at cleansing and organizing data into new, more functional formats to drive increased efficiency and enhanced returns on investment.

Education

Doctor of Philosophy: **AI in Medical Imaging** Anticipated Oct 2026
SFI Machine Learning Lab, University College Dublin

Modules: Statistics, Machine Learning, Deep Learning, Biomedical Imaging

Master of Science (H2.1): **Statistics** Oct 2022
University College Dublin

Modules: Mathematical Statistics, Applied Statistical Modelling, Numerical Algorithms, Applied Matrix Theory, Survival Models, Monte Carlo Inference, Bayesian Analysis, Time Series Analysis.

Master of Science (H1.1): **Computer Science** Sep 2014
University College Dublin

Modules: Performance of Computer Systems, Information Security, SQL Programming, Virtualisation & Cloud Computing, Distributed Systems.

Bachelor of Science (H2.1): **Software Systems Practice** May 2013
Waterford Institute of Technology

Modules: Data Warehousing, Database Administration, Business Intelligence, Database Systems and SQL, Web Server Programming.

Bachelor of Engineering (88%): **Software Engineering** May 2013
Nanjing University of Information Science Technology

Modules: Higher Mathematics, Foundations of Computer Science, Server Programming, OOP, System Analysis, Data Structure, Graph Theory, Linear Algebra, Discrete Mathematics, Probability and Mathematical Statistic, Computer Network, Database System, Agile Development.

Publications

Bai, J., Zhou, Z., Ou, Z., Koehler, G., Stock, R., Maier-Hein, K., … Lekadir, K. (2024). PSFHS Challenge Report: Pubic Symphysis and Fetal Head Segmentation from Intrapartum Ultrasound Images. **Medical Image Analysis**, 103353. doi:10.1016/j.media.2024.103353

Ye, Z., Chen, T., **Wang, F.**, Zhang, H., & Zhang, L. (2024). LV-Mamba: Integrating Denoising Mechanism with Mamba for Improved Segmentation of the Pediatric Echocardiographic Left Ventricle. Proceedings of 2024 International Conference on Medical Imaging and Computer-Aided Diagnosis (**MICAD 2024**)

Wang, F., Whelan, K., Silvestre, G., & Curran, K. M. (2024). Generative Diffusion Model Bootstraps Zero-shot Classification of Fetal Ultrasound Images In Underrepresented African Populations. Perinatal, Preterm and Paediatric Image Analysis. **MICCAI PIPPI 2024**.

Ye, Z., Chen, T., Wang, D., **Wang, F.**, & Zhang, L. (2024). HFE-Mamba: High-Frequency Enhanced Mamba Network for Efficient Segmentation of Left Ventricle in Pediatric Echocardiograms. **IEEE Access**, 12, 123038–123048. doi:10.1109/ACCESS.2024.3424546

Murphy, J., **Wang, F.**, Mazhar Qureshi, M.D. and Namee, B.M., 2024. From Ground to Orbit: Enhancing Satellite Autonomy With AI-Powered Anomaly Detection.

Aleem, S., **Wang, F.**, Maniparambil, M., Arazo, E., Dietlmeier, J., Curran, K., … Little, S. (2024, June). Test-Time Adaptation with SaLIP: A Cascade of SAM and CLIP for Zero shot Medical Image Segmentation. Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPRW 2024**).

Wang, F., Silvestre, G., & Curran, K. M. (2023). Evaluate Fine-tuning Strategies for Fetal Head Ultrasound Image Segmentation with U-Net. Irish Machine Vision and Image Processing Conference Proceedings (**IMVIP**) 2023, 350–353. Irish Pattern Recognition and Classification Society.

Pallonetto, F., Mangina, E., Finn, D., **Wang, F.**, & Wang, A. (2014). A restful API to control a energy plus smart grid-ready residential building: demo abstract. Proceedings of the 1st ACM Conference on Embedded Systems for Energy-Efficient Buildings (**ACM BuildSys** 2014), 180–181.

Accomplishments

5th Place Winner – FH-PS-AOP Challenge *MICCAI, 2023*

Goal:

- To automatically segment 700 fetal head (FH)-pubic symphysis (PS) from transperineal ultrasound images.
- To serve as a benchmark dataset for objective comparison of new methods for FH-PS segmentation.

1st Place Winner - *Data Link Hackathon, 2021*

Goal:

- To determine whether a reduction in time going out during COVID-19 will reduce risk of infection.
- Studied the relationship between the number of people diagnosed with COVID-19 and changes in population movements in Ireland.
- Leveraged this model to better understand lockdown policies, use as a reference for travel decisions, and predict the number of confirmed cases.

Certifications

- **Machine Learning** *(Credential ID: FAN7LQN5KKG3)*
- **AWS Certified Cloud Practitioner** *(Credential ID: R32TLQW1MJBQ1EW8)*
- **IBM AI Engineering Specialization** *(Credential ID: BCZZ27HZER8U)*
- **Machine Learning with Apache Spark** *(Credential ID: AZ89KDFX824Q)*

Professional Experience

PhD Researcher Sep 2022 – Current
University College Dublin Dublin, Ireland

Deep Learning in Medical Imaging

Intern Mar 2024 – May 2024
Réaltra Space Systems Engineering Dublin, Ireland

Data Engineer Nov 2017 – Dec 2022
Verizon Connect Dublin, Ireland

Projects:

- Data Lake development on the AWS cloud: Created data pipelines to load data from S3 to the Redshift data warehouse using SQL and Python.
- Data Migration: Owned the development roadmap end-to-end frequently communicating across the team to deliver batched data on time and implement new features that aligned with client requirements.

Innovation Project: NLP

- Worked closely with Data Scientists to establish a deep learning model to allow for the collation and categorization of customer comments.
- Leveraged FastAI (ULMFit) frameworks and FastText as well as a popular deep learning library (Pytorch and Tensorflow) to develop this project at the POC stage subsequently handing it off to the Data Analysis team to develop further.

Data Warehouse BI Developer Sep 2015 - Nov 2017
Citigroup Dublin, Ireland

SSIS ETL Projects:

- Designed BI dashboards with Qlik & delivered findings to leadership/business customers on a monthly basis.
- Developed and optimized an ETL pipeline to load data to the Netezza data warehouse.
- Identified emerging issues in databases, performed troubleshooting on malfunctions, and removed system-based barriers to convey accurate business results to the client.
- Implemented code changes based on business requirements.
- Tracked deliveries to ensure alignment with SLA's.

Localization Tester Oct 2014 - Jul 2015
Keywords Studio Dublin, Ireland

- Verified linguistic accuracy of in-game subtitles & validated typography, grammar and punctuation.
- Worked with other linguistic testers to delivery high quality of video games to customers.
- Took ownership of side tasks including daily reports, bug vetting, and coaching of new team members.

Skills

Programming Languages:

- SQL
- Matlab
- C#
- Python
- Bash
- Java
- R

Technologies & Tools:

- Airflow
- SQL Server
- SSIS
- Data Warehouse
- NLP
- Data Visualisation
- Numpy
- Scikit-learn
- Redshift
- Tensorflow
- S3
- FastAI
- .Net
- Pytorch
- PL/SQL
- MySQL
- OpenCV