

Jiyao Pu

+44 7907 400115 | rtpujiyao@gmail.com | [LinkedIn](#) | [Homepage](#)

PROFESSIONAL SUMMARY

PhD in Machine Learning from Durham University with hands-on experience in rule generation, reinforcement learning, NLP, LLM applications, and multi-agent systems. Developed the Strategy Evaluation Rule (SER) framework integrating neural rule generation, simulation, and social-metric evaluation, delivering adaptive and scalable AI solutions. Skilled in Python, PyTorch, TensorFlow, LangChain, AWS/GCP, and deploying ML pipelines in production environments. Seeking AI/ML Engineer roles to apply research expertise in building intelligent, efficient, and user-centric AI products. Holding a 3-year UK PSW visa (valid until 2028).

EDUCATION

- **Durham University** Mar 2021 - Jun 2025
PhD in Machine Learning Durham, UK
- **Newcastle University** Sep 2019 - Sep 2020
MSc in Computer Science Newcastle, UK
 - Grade: 76.6%
- **University of Electronic Science and Technology of China** Sep 2012 - Jun 2016
BSc in Electronic Science and Technology Chengdu, China

WORK EXPERIENCE

- **Application Solutions Manager** Jul 2016 - Mar 2019
China Mobile Communications Group Yunnan Co., Ltd., Chuxiong Branch, Enterprise & Government Client Department
 - Supported bid and tender preparation by managing documentation, maintaining version control, and collaborating with internal teams on proposal submissions.
 - Managed and promoted enterprise product offerings, including intelligent TV set-top boxes, tailoring application solutions for government and corporate clients.
 - Designed and documented scalable workflows and solution specifications to improve deployment efficiency and service onboarding.
 - Organised and delivered product training sessions for branch staff to enhance their proficiency with enterprise solutions.

SKILLS

- **Programming Languages:** Python, C, C++, C#, Java, JavaScript, HTML, CSS, PHP, SQL, Shell.
- **Platform:** Linux, Unity, Unreal Engine 5, Godot Engine, AWS, GCP, Windows.
- **AI:** Reinforcement learning, Zero-shot learning, Few-shot learning, Generative models, Contrastive learning, Deep learning, Large Language Models (LLMs)
- **Tools:** PyTorch, TensorFlow, LangChain, Git, Docker, Kubernetes.
- **Hardware & Embedded Systems:** MSP430, Raspberry Pi, Electric Wheelchair Platform, EEG, Mechanical Arm Car Platform, Camera Modules, Sensor Integration, Motor Drivers, DSP, FPGA, Controllers.

PROJECTS

- **AI Talent Bench** Feb 2025 – Jun 2025
Web Technologies, LLM, Task Generation Framework
 - Architected and implemented a web-platform prototype for MXM's AI Talent Bench, enabling companies to upload job descriptions and configure training and assessment workflows.
 - Extended "Rule Generation Networks" framework to develop a Task Generator that ingests job descriptions, seed metrics, and seed datasets (Google stock data, Geometric Brownian motion, Beijing air quality), producing parametrised, labelled time-series tasks with justifications.
 - Led MXM's Durham team in prototype development and drafted all AWS competition documentation.
- **Digital Twin Dreamscape** Jun 2023 - Dec 2023
Raspberry Pi, Python, Unity, Web/Mobile Technologies, OpenCV, Reinforcement Learning
 - Developed an integrated control system for real-time video streaming and remote control via web/mobile interfaces.
 - Implemented a digital twin in Unity that mirrors the physical car's movements, achieving synchronised control between virtual and physical spaces.
 - Created a proportional virtual model of the robotic arm car and incorporated target recognition pipelines with OpenCV, ensuring accurate digital representation.

- Applied reinforcement learning techniques to train an intelligent agent for autonomous control of the virtual car, optimising performance through real-time feedback.

• EyeGaze Smart Wheelchair

Jul 2022 - Dec 2022

Electric Wheelchair Platform, Camera Module, Python, OpenCV, Eye-Tracking Algorithms

- Developed a vision module integrated with a traditional electric wheelchair, capturing real-time eye images via a camera sensor.
- Implemented eye-tracking algorithms using OpenCV to analyse gaze data and translate it into control commands for wheelchair movement.
- Created a responsive interface linking the visual sensor input to the wheelchair's control system, ensuring intuitive navigation.
- Applied real-time image processing techniques to achieve accurate eye movement detection, enhancing the overall system performance.

• Laser Beam Combining via LCOPA Control

Sep 2014 - Jun 2015

FPGA, DSP, LCOPA, VHDL, Image Processing, Target Recognition

- Developed a hardware control system integrating FPGA-based video acquisition for real-time image capture.
- Implemented DSP-based video processing algorithms for efficient target recognition.
- Created the LCOPA (Liquid Crystal Optical Phased Array) control module, ensuring precise optical phase adjustments.
- Applied advanced image processing techniques to optimise laser beam combining performance.

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, T=THESIS

- [J.1] Pu, J., Duan, H., Zhao, J. and Long, Y., 2023. Rules for Expectation: Learning to Generate Rules via Social Environment Modelling. *IEEE Transactions on Circuits and Systems for Video Technology*.
- [C.1] Gao, R., Wan, F., Organisciak, D., Pu, J., Duan, H., Zhang, P., Hou, X. and Long, Y., 2023. Privacy-enhanced zero-shot learning via data-free knowledge transfer. In *2023 IEEE International Conference on Multimedia and Expo (ICME)* (pp. 432-437). IEEE.
- [T.1] Pu, J., 2025. Hybrid Intelligence in Evolving Games: Automated Rule Design, Strategy Evolution, and Evaluation Optimisation for Intelligent Societies. PhD thesis, Durham University.

MANUSCRIPTS IN PREPARATION

S=IN SUBMISSION, M=MANUSCRIPT

- [M.1] Triadic Reciprocal Dynamics: The AI Framework for Social Rule Evolving. Plan to submit *Nature Machine Intelligence* for consideration.
- [M.2] Integrating Extrinsic and Flow Intrinsic Rewards for Adaptive Rule Generation in Dynamic Environment. Plan to submit *Nature Humanities and Social Sciences Communications* for consideration.
- [S.1] Flow-Centric Rule Design: Evolving Rules for Optimal Difficulty and AI Skill Balance. Submitted to *ACM Multimedia* 2025.