Xi Lu, PhD

Cambridge, UK | +44 74192 87108 | Right to work: United Kingdom & Hong Kong

Professional Summary

10+ years of cross-domain experience applying *hybrid intelligence*, statistical modelling, and machine learning to real-world problems across public health, informatics, and telecommunications. Proven record of building robust ML pipelines, delivering cloud-based analytics, and translating complex data into actionable insights. Strong cross-disciplinary communicator skilled in Python, R, SQL, and modern MLOps tools.

Key Achievements

- Improved genomic cluster classification accuracy by 25% through ML pipeline optimisation in Python and Nextflow.
- Accelerated large-scale genomic data processing (20,000+ records) by 30% through automated ETL (Extract, Transform, Load) workflows.
- Built Bayesian models forecasting infectious disease trends, supporting vaccine strategy and public-health decisions.
- Supervised postgraduate teams on ML and epidemiological modelling, improving research quality and output impact.

Core Skills

- Programming: Python (Pandas, NumPy, scikit-learn), R, SQL, Shell, Git, Jupyter, MATLAB
- Machine Learning: Supervised learning, forecasting, feature engineering
- Data Engineering: ETL, data cleaning, visualisation, A/B testing, statistical inference
- Cloud & MLOps: Google Cloud Platform, Nextflow, Linux, Docker, version control (Git)
- Domains: Genomics, AI for public health, information technology

Professional Experience

- **Chief Scientist & Founder | Sloths Intel, Cambridge, UK (Dec 2025 – Present)**
  - Lead Sloths Intel, overseeing hybrid intelligence frameworks that combine data, machine learning, and expert judgment to produce actionable and trustworthy insights.
  - Design, prototype, and guide production of practical analytics.
  - Partner with organisations to conceptualise and deploy transparent AI/data systems that perform under real-world constraints.
- **Research Fellow | Wellcome Sanger, Cambridge, UK (Apr 2024 – Dec 2025)**
  - Designed and automated ML pipelines for genomic cluster analysis using Python and Nextflow, improving outbreak detection efficiency.
  - Processed and standardised 20,000+ genomic datasets for global surveillance, ensuring data integrity and high-quality downstream analysis.
  - Collaborated with cross-functional engineering and data teams to curate and migrate biomedical data across cloud environments.
- **Research Associate | Imperial College London, London, UK (Jun 2020 – Dec 2023)**

- Developed a Bayesian ML framework to model genomic epidemiology and forecast infectious disease burdens across the UK.
- Analysed multi-country genomic datasets (>100,000 records) to identify bacterial migration and resistance trends influencing vaccine design.
- Supervised 3 postgraduate projects in ML and data analytics; delivered teaching in statistics and applied machine learning.
- Published conference papers and manuscripts on computational modelling and AI for public health applications.

▪ **Visiting Scholar | Tampere University, Tampere, Finland (Sep 2018 – Dec 2018)**

- Conducted research on mission-aware systems and reliability modelling for next-generation 5G networks, producing 2 peer-reviewed publications.

▪ **Teaching Assistant | King's College London, London, UK (Sep 2017 – Jun 2019)**

- Delivered tutorials and marked coursework for modules in data structures, computing, and circuit theory (~300 students).
- Supervised MSc projects applying ML to optimise wireless network traffic.

Education

- PhD, Telecommunications Research | King's College London, UK (2015 – 2019) – Thesis: 5G-U: Coexistence Framework for 5G Cellular and IEEE 802.11ad/ay
- MSc, Telecommunications and Internet Technology | King's College London, UK (2013 – 2015)
- BEng, Information Engineering | Wuhan University of Technology, China (2009 – 2013)

Professional Certifications

- Google Advanced Data Analytics Professional Certificate (2024 – 2025)
- Google Data Analytics Certificate (2024)
- DeepLearning.AI Machine Learning Specialisation – Stanford University (2024)

Selected Publications

- Coexistence of New Radio and IEEE 802.11ad/ay Technologies in Unlicensed mmWave Bands, IEEE Trans. Veh. Tech., 2021
- Applying Blockchain Technology for Users Incentivization in mmWave Networks, IEEE Access, 2020
- 5G-U: Integrated Utilisation of Licensed and Unlicensed Spectrum, IEEE Communications Magazine, 2019

Languages

English (professional) | Chinese (native) | German (intermediate) | Russian (basic)

References

Available upon request from Prof Mischa Dohler, Prof Toktam Mahmoodi, Prof Nicholas Croucher, Dr Stephanie Lo.