Yizirui FANG

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EDUCATION

University of Nottingham, Ningbo China

Bachelor of Science (Hons), Computer Science **Sept 2018 – Jul 2022**

- **GPA**: 3.88/4.0 (major: 3.95/4.0)
- **Expected Degree**: First Class Degree with Honors
- **Core Courses:** Machine Learning, Compiler, Computer Vision, Big Data, Mathematics for Computer Scientists
- **Service:** Peer Mentor, Student Representative, Passing Hope Sports Social Service

Imperial College London

Machine Learning and Applied Statistics Summer Session (ECTS 7.5) **Jul 2019**

- **GPA**: 3.7/4.0
- Senior-level time series and stochastic process

RESEARCH EXPERIENCE

Augmentation Techniques for Population Drift in Credit Risk Modelling (Thesis) **Jul 2021 - Current**

- Supervised by Dr. Anthony Graham Bellotti, Associate Professor in Computer Science
- Designed and created two large-scale databases for financial data with more than 2 billion samples.
- Replicated credit risk models in Gradient Boosting, Neural Network with Ski-kit learn, LightGBM, NumPy.
- Proposed augmentation techniques to unify the distribution of time-series data and improve AUC from 0.73 to 0.79.
- Proposed domain transfer approaches to utilize various augmentation techniques under distinct economic impacts.

Genes Expression Analysis on the Single Cell Transplantation **May - Sept 2021**

- Supervised by Prof. Vladimir Brusic, Li Dak Sum Chair Professor in Computer Science
- Automatized and integrated the four-cell type classification and visualization methods, distance profile, RNA profile, Protein Marker Profile, Artificial Neural Network, with their comparison and analysis in Python, Pandas, and SciPy.
- Proposed, implemented, and validated a novel normalization approach of the individual cell profile to improve the robustness of the distance profile analysis for the cell type prediction.

Efficient Reliable Machine Learning through Conformal Prediction **May - Nov 2020**

- Paid RA, Supervised by Dr. Anthony Graham Bellotti
- One working journal paper as the first author
- Proposed and evaluated the optimal approach to efficiently distribute data for conformal prediction.
- Proposed and proved with theoretical and empirical analysis a modified version of the conformal predictor by overlapping two data sets to provide machine learning prediction sets under confidence levels in a data-efficient way.

PROJECT EXPERIENCE

Virtual Classroom Project Team **Sept 2020 - Current**

Paid Senior Student Intern for Software and Technology

- One pending patent in the application process.
- Two million CNY funded by local government
- Supervised by Vice Provost, Dr. K. Cohen Tan, and led by Dr. Sannia Mareta.
- Developed multi-player scene customization in the virtual classroom settings for PC and desktop VR to improve the learning and teaching experience of the curricular courses.
- Developed moving, game, and menu in motional VR in Omni hardware and mobile VR with Google VR.
- Design and developed the interactive methodologies in mobile, and desktop VR
- Assisted and mentored the programming summer school and staff training workshops.

Distributed Road Network Monitoring System Group Project **Sept 2020 – Apr 2021**

Team Leader | Supervised by Dr. Matthew Pike | Released in GitHub

- Managed the team, project process, task distribution, and communication with stakeholders.
- Designed and implemented the road condition evaluation algorithm based on dynamic time warping algorithm
- Developed the back-end utilities including a server supporting high concurrency and database.
- Developed cross-platform mobile application to collect location and acceleration data and communicate with the server

AWARDS & SKILLS

- **Awards:** Zhejiang Provincial Excellent Graduate (72/2000~), Zhejiang Provincial Government Scholarship (Academic Top 5%), 2021 Dean List (Academic Top 10%), 2020 Head Scholarship (Academic Top 20%), 2020 Outstanding Youth League Member (Community Service Top 5%), Honorable Mention at Mathematical Contest in Modelling
- **Programming Language**: Python, Java, C/C++, C#, Haskell R, Dart
- **Techniques:** PyTorch, TensorFlow, Ski-kit Learn, statsmodels, Unity, Django, Docker, PostgreSQL, Linux