YIXUAN HE

https://sherylhyx.github.io/ ⋄ yixuan.he@balliol.ox.ac.uk

University of Oxford

EDUCATION

University of Oxford, Dphil in Statistics   Oct. 2020 -
Clarendon Scholar (fully funded), Balliol Jason Hu Schorlarship
College: Balliol, supervisors: Mihai Cucuringu & Gesine Reinert

University of Edinburgh, UoE   Sept.2018 - June 2020
Major: **(BSc Hons) Maths & Stats** (**92.33%** Avg., **Rank # 1** in Maths & Stats, **First Class**)
Courses: Stats Methodology(**100%**), Financial Maths(**100%**), Numerical PDEs(**100%**), Fundamentals of Optimization(**98%**), Nonparametric Regression Models(96%).
Honours project: AUROC vs AUPRC: A Comparison of Performance Measures in Classification Problems, supervised by Timothy I. Cannings.

University of California, Berkeley   Jan. 2018 - May 2018
Courses: Numerical Analysis (**A+**), Complex Analysis (**A+**), Abstract Algebra (A)(GPA: **4.0/4.0**)

South China University of Technology, SCUT   Sept.2016 - June 2020
Major: **Mathematics & Applied Mathematics** (Rank **1/60**)(Outstanding graduate)
Overall GPA for 2016-18: **3.99/4.0**, Major GPA: **4.0/4.0**; transferred to Edinburgh on 2+2 program
Winning 2 years′ **National Scholarship** granted by Ministry of Education of China
650/710 in CET6, overtaking **99.98%** students in SCUT

RESEARCH EXPERIENCE

Behaviour-based Anti-cheating in FPS Games   June 2020 - Aug. 2020
NetEase Games Summer Intern   *Supervisor: Xin Wen*

· Extracted features from logs using **multiprocessing** & build **multi-input single-output models**.
· Utilised **TensorFlow** 2.2 to build neural networks via functional API & subclass method.
· Compared different classifiers (e.g. SVM, GBM) & **dimensionality reduction** approaches.
· Used **Keras Tuner** & grid search for hyper-parameter tuning and **tmux** as a terminal multiplexer.
· Selected as **Outstanding Intern** to present my work.

UCLA CSST summer research/REU: Deforestation Brazil   June 2019 - Sept. 2019
Funded by NGA & NSF   Supervisors: Christian Parkinson, Andrea L. Bertozzi, Stanley J. Osher

· Conducted data mining, data analysis, matlab programming & model construction.
· Implemented **level set method**, numerical PDEs, optimal path searching, satellite image processing, Maximum Penalized Likelihood Estimation (MPLE), time series simulation etc.
· **Delivered a talk** at IPAM's "The Level Set Collective" seminar invited by Professor Stanley Osher.
· **Presented a** poster at Intelligence Community Academic Research Symposium (ICARS) 2019.

SCUT: Robust Image Salient Object Perception Prior for Image Segmentation based on PDEs Related Methods   May 2018 - May 2020
Funded by National Natural Science Foundation of China (**NSFC**)   *Supervisor: Delu Zeng*

· Studied level set methods and **neural networks** on **semantic image segmentation**.
· **First author** of paper at workshop of **CVPR 2019**: Scan-flood Fill (SCAFF): an Efficient Automatic Precise Region Filling Algorithm for Complicated Regions.
· Worked on lung nodule segmentation using MEnet.
· 2th auth. of: Ro-SOS: Metric Expression Network (MEnet) for Robust Salient Object Segmentation.

SCUT: Efficiency of Collaborative Innovation Knowledge Output in Professional Towns in Internet + Times   May 2017 - May 2018
Funded by MOE of PRC   *Supervisors: Shifu Wang, Miaoxi Zhao, Shenquan Liu*

· **Cross-disciplinary**: Maths & Urban Planning. Responsible:data mining & analysis, paper writing.
· **Led** the project as part of the National Training Program of Innovation for Undergraduates.

CONFERENCES

Berkeley Undergraduate Number Theory Conference	Attendee	Apr. 2018
European Conference on Computer Vision(**ECCV**) pre-conference	Attendee	July 2018
Computer Vision and Pattern Recognition(**CVPR**)	Workshop **1**[st] author	June 2019
Intelligence Community Academic Research Symposium (**ICARS**)	Poster presenter	Sept. 2019

MAJOR AWARDS

Prize	2020′s Napier Medal and Gangadhar Balwant Gadgil Prize (**top** Maths student @UoE)
Prize	2020′s Lawley Memorial Prize (**top** student in Maths & Stats @UoE)
Scholarship	2020′s Clarendon Scholarship & Balliol Jason Hu scholarship at Oxford
Honor	2020′s Outstanding Graduate at SCUT Maths Dept.
Prize	2019′s Arthur Erdelyi Prize (For top 3 performing Math students @UoE)
Prize	2019′s James Ward Memorial Prize (**top** student in Maths & Stats @UoE)
Second Prize	2018′s ICM/MCM International **Mathematical Modeling** Competition
Grand Prize	2018′s Maths Competition of SCUT (Maths Group) (**Rank # 1**)
Honor	2017-2018′s one of the ten **Role Models to Merit Students** at SCUT
Prize	2017′s & 2018′s **National Scholarship**
Second Prize	2017′s "9th National College Student **Maths Competition** (Maths)" in Guangdong
Second Prize	2017′s National College Student Mathematical Modeling Competition (Guangdong)

COMPUTER SKILLS

Programming:	**Python (Advanced)**, C++ (Intermediate), VB (Basic) & Pascal (Basic)
Statistical Analysis:	**R (Advanced)**, SQL (Intermediate) & SPSS (Intermediate)
Modelling:	**Matlab (Advanced)**, Maple (Intermediate) & Xpress (Intermediate)
Paper writing:	**Latex (Advanced)**

WORK EXPERIENCE

UoE's Digital Skills Trainer - Python   Dec. 2019-May 2020

· **Deliver Python training courses**, review & improve existing Python training.
· Recorded lectures: Introduction to Python and Python for Data Science.

Head of Class   Sept. 2013-June 2018

· Conveyed notifications, organized activities & led by example.
· 2017′s & 2018′s South China University of Technology **Outstanding Student Leader**.
· 2016-2017′s **outstanding class** of SCUT & 2017-2018′s top-16 classes of SCUT.

University Student Representative   May 2017-May 2018

· Actively listened to students′ opinions & participated in raising proposals.
· Outstanding Student Representative of South China University of Technology in 2017.

Member of Public Relationship Dept., Math Student Union   Sept. 2016-Oct. 2017

· **Led** the hosting of a social party in School of Mathematics.
· 2017′s **Star** in Mathematics Student Union.

Teaching Support in a Primary School in Longsheng Rural Village   July 2017

· Devised & delivered lectures in singing, dancing, craftmanship & story-telling.
· **Leader** in hosting the closing ceremony.
· **Visited families** to collect information & offer suggestions.