

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 Scholarship
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, Miaoqi 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 1st 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 "9 th 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
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- **Delivered Python training courses**, reviewed & improved existing Python training.
- Course webpages (including lecture recordings): **Introduction to Python** and **Python for Data Science**.

Head of Class	Sept. 2013-June 2018
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- 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
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- 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
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- **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
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- Devised & delivered lectures in singing, dancing, craftsmanship & story-telling.
- **Leader** in hosting the closing ceremony.
- **Visited families** to collect information & offer suggestions.