YIXUAN HE

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University of Edinburgh /South China University of Technology

EDUCATION

University of Edinburgh, UoE (**93%** Avg., **No. 1** in Math & Stats)　　　Sept.2018 - June 2020
2+2 dual Bachelor′s degree: **(BSc Hons) Mathematics & Statistics**
Courses: Statistical Methodology(**100%**), Financial Mathematics(**100%**), Stochastic Modelling(95%),
Statistical Computing(95%), Honours Analysis(94%), Honours Algebra(94%), Statistical Learning(90%)etc.
Machine learning research: **AUROC vs AUPRC: A Comparison of Performance Measures in Classification Problems** (collected data, compared measure scores, **analysed measure properties** & data properties).

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

South China University of Technology, SCUT (class rank **1/60**)　　　Sept.2016 - June 2020
Major: **Mathematics & Applied Mathematics**
Overall GPA: **3.99/4.0**, Major GPA: **4.0/4.0**
Winning 2 years′ **National Scholarship** granted by Ministry of Education of China
650/710 in CET6, overtaking **99.98%** students in SCUT

RESEARCH EXPERIENCES

UCLA CSST summer research/REU: Deforestation Brazil　　　　June 2019 - Present
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.

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

· Studied level set methods and **neural networks** on **semantic image segmentation**.
· Cooperated on an extension of 2018s **IJCAI paper**- MEnet: A Metric Expression Network for Salient Object 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.
· Utilized platforms including Linux, caffe & programming in Python.

Efficiency of Collaborative Innovation Knowledge Output in Professional Towns in Internet + Times　　　　　　　　　　　　　　　　　　　　May 2017 - May 2018
Funded by Ministry of Education of the China Supervisors: Shifu Wang, Miaoxi Zhao, Shenquan Liu

· **Cross-disciplinary**: Mathematics & Urban Planning.
· Responsible for data mining, data analysis, paper writing (pending publication).
· **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**$^{\text{st}}$ author	June 2019
Intelligence Community Academic Research Symposium (**ICARS**)	Poster presenter	Sept. 2019

MAJOR AWARDS

Prize	2019′s Arthur Erdelyi Prize (top 3 in School of Mathematics at UoE)
Prize	2019′s James Ward Memorial Prize (**top 1** in Mathematics & Statistics at UoE)
Second Prize	2018′s ICM/MCM International **Mathematical Modeling** Competition
Grand Prize	2018′s Mathematics Competition of South China University of Technology (Mathematics Group) (top 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 "Ninth National College Student **Mathematics Competition** (Mathematics)" in Guangdong
Second Prize	2017′s National College Student Mathematical Modeling Competition Undergraduate Group in Guangdong
Gold medal	2014′s CYCC (China Youth **Creativity Competition**) for creation
Silver award	2014′s IENA international creation competition

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 EXPERIENCES

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. in 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.

Student Assistant for School of Mathematics   Sept. 2016-Aug. 2017

· Assisted in organizing materials & releasing notifications.

· Outstanding individual in work study of South China University of Technology.

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

· Delivered lectures in singing, dancing, craftmanship & story-telling.

· **Leader** in hosting the closing ceremony.

· **Visited families** to collect information & offer suggestions.