

# YIXUAN HE

University of Edinburgh /South China University of Technology

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Bachelor's: Mathematics and Statistics /Mathematics and Applied Mathematics (2+2)

## EDUCATION

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**University of Edinburgh (UoE)** *Sept.2018 - June 2020(expected)*  
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.  
Average: **93%**, **top 1** in Mathematics & Statistics

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

**South China University of Technology (SCUT)** *Sept.2016 - June 2020(expected)*  
Major: **Mathematics & Applied Mathematics**  
GPA: major **4.0/4.0**, overall 3.99/4.0, class ranking **1/54**  
Major average score **97.33%**, overall average score 96.24%  
Winning 2 years' **National Scholarship** granted by Ministry of Education of China  
**650/710** in CET6, overtaking **99.98%** students in SCUT

## RESEARCH EXPERIENCES

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**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 **beural 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

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Berkeley Undergraduate Number Theory Conference 2018	Attendee	April 2018
European Conference on Computer Vision( <b>ECCV</b> ) 2018 pre-conference	Attendee	July 2018
Computer Vision and Pattern Recognition( <b>CVPR</b> ) 2019	First author of paper at workshop <b>CEFRL</b>	June 2019
Intelligence Community Academic Research Symposium ( <b>ICARS</b> ) 2019	Poster presenter	Sept. 2019

## MAJOR AWARDS

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<b>Prize</b>	2019's Arthur Erdelyi Prize (top 3 in School of Mathematics at UoE)
<b>Prize</b>	2019's James Ward Memorial Prize ( <b>top 1</b> in Mathematics & Statistics at UoE)
<b>Second Prize</b>	2018's ICM/MCM International <b>Mathematical Modeling</b> Competition
<b>Grand Prize</b>	2018's Mathematics Competition of South China University of Technology (Mathematics Group) (top 1)
<b>Honour</b>	2017-2018's one of the ten <b>Role Model to Merit Students</b> at SCUT
<b>Prize</b>	2017's & 2018's <b>National Scholarship</b>
<b>Second Prize</b>	2017's "Ninth National College Student <b>Mathematics Competition</b> (Mathematics)" in Guangdong
<b>Second Prize</b>	2017's National College Student Mathematical Modeling Competition Undergraduate Group in Guangdong
<b>Gold medal</b>	2014's CYCC (China Youth <b>Creativity Competition</b> ) for creation
<b>Silver award</b>	2014's IENA international creation competition

## COMPUTER SKILLS

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

## WORK EXPERIENCES

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<b>Head of Class</b>	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.

<b>Host of School of Mathematics in SCUT</b>	Oct. 2016- June 2018
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- Hosted in 2016's Mathematics Athletics Games & 2018's Math flag-raising ceremony.

<b>University Student Representative</b>	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.

<b>Member of Public Relationship Dept. in Math Student Union</b>	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.

<b>Student Assistant for School of Mathematics</b>	Sept. 2016-Aug. 2017
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- Assisted in organizing materials & releasing notifications.
- Outstanding individual in work study of South China University of Technology.