Yequan Bie

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EDUCATION

South China University of Technology (SCUT)   Guangzhou, China

Bachelor of Engineering in *Intelligent Science and Technology*   2019.09 - 2023.06

Overall GPA: 3.80/4.0   90.2/100   Third Year GPA: 3.95/4.0

University of California, Berkeley (Cal)   Berkeley, CA, USA

Overall GPA: 4.0/4.0   Visiting Student in *Electrical Engineering & Computer Sciences*   2022.01 - 2022.06

Core Courses: Data Structures (A+), Java: Discovering its Power (rank 1st), Principals & Techniques of Data Science (A)

Designing, Visualizing and Understanding Deep Neural Network (A)

SCHOLARSHIPS

UC Berkeley Extension SAF Merit Scholarship	2022.01
China National Scholarship (**Top 0.2%**)	2021.12
First-class MEAN WELL Scholarship, SCUT (**Top 1%**, twice)	2021.04 / 2022.04
First-class Scholarship provided by Hongping Evergreen Fund (twice)	2021.07 / 2022.07

SELECTED AWARDS

Top Ten Merit Students Candidate of SCUT (**Top 1%**)	2022
Merit Student of SCUT (Top 5%, twice)	2021 / 2022
American Mathematical / Interdisciplinary Contest in Modeling – *Meritorious Winner (top 6% worldwide)*	2021
National College Students Mathematical Contest in Modeling – *First Prize*	2021
The 7th China Mobile Internet Innovation Contest – *South China Division Gold Award*	2021

PUBLICATION & PATENT

- **Yequan Bie**, Hao Tan. Image Recognition in Autonomous Driving Based on Improved Swin Transformer, *IEEE International Conference on Artificial Intelligence and Computer Applications, 2022.*   [*IEEE*]

- **Yequan Bie**. Age Estimation with Synthetic Mask Generation Based on MobileNet and Facial Keypoint Detection, *IEEE International Conference on Power, Intelligent Computing and Systems, 2022.*   [*IEEE*]

- Yi Qin, **Yequan Bie**, Hao Tan, Yajing Zhou. A Transformer-based Logistics Package Separation Method. (Invention patent)   ⌂

- Hao Tan, **Yequan Bie**, Junlin Pan. Five-axis Robotic Arm Trajectory Planning Control and Intelligent Interactive Software Development. (Software copyright)   ⌂

RESEARCH EXPERIENCE

Research assistant | **Business AI Lab** | **Nanyang Technological University** *(PI: Prof. Teoh Teik Toe)* ⌂

Age Estimation and Facial Keypoint Detection Based on Improved MobileNet   2022.01-2022.03

- ➢ Designed and implemented a convolutional neural network based on MobileNet using Keras as the first member of the project, successfully reduced the average age error of 2 years old
- ➢ Submitted the paper to IEEE International Conference on Image, Vision and Computing as the first author

Research assistant | **Brain-Computer Interface & Brain Information Processing Center | SCUT**

A Bayesian Approach to Weakly Supervised Instance Segmentation   2021.05-2022.01

- ➢ Conducted instance segmentation on VOC and COCO datasets given weak labels based on Bayesian Learning and EM algorithm
- ➢ Implemented EM algorithm, optimized data pseudo-labels under the Bayesian framework, increased accuracy by 2%

Core member | **National College Students' Innovative Entrepreneurial Training Plan Program | SCUT**

Development of Logistics Sorting System Based on Cyber-Physical Systems (CPS)   2020. 09-2022. 04

- ➢ Implemented instance segmentation of logistics packages based on Segformer, increased precision by 3%
- ➢ Won gold award in China Mobile Internet Innovation Contest and published an invention patent

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PROFESSIONAL EXPERIENCE

Big Data Development Engineer Intern **| ByteDance (TikTok), Beijing Headquarters**

Product Development and Engineering Architecture Department   2022.09-present

➢ Assist with the construction of an efficient, real-time and stable computing engine to support the recommendation and advertising business of dozens of product lines within the company (TikTok, Toutiao, etc.)

➢ Develop and maintain the underlying components of cloud platforms used by the company, such as Toutiao Cloud Engine and Arnold (deep learning training platform), improved release efficiency by 40%

SELECTED COURSEWORK PROJECTS

Independent project **| Image Captioning with LSTMs and Transformers | UC Berkeley**   2022.04

➢ Implemented LSTM and transformer models for image captioning using pytorch

➢ Improved model parameters and training strategy, resulting in a 4% increase in accuracy

Independent project **| Gitlet: Version Control System | UC Berkeley**   2022.04

➢ Applied Java and object-oriented programming to implement a version control system similar to git

➢ Implemented most functions of git including add, commit, log, rm, checkout, status, merge, etc.

Independent project **| Real-Time Gesture Recognition System Based on CNN | SCUT**   2021.11

➢ Designed a convolutional neural network to perform gesture recognition

➢ Outperformed AlexNet and GoogLeNet in the Sign Language Digits Dataset with 95.4% testing accuracy

Independent project **| SCLib: A Library Management System | SCUT**   2021.10

➢ Created a library management system with functions of book borrowing and returning, acquisition management, user information modification and overdue payment based on SQL and Python

➢ Performed database management with MySQL, implemented logic based on Python & Pymysql, and used PyQT5 for front-end interface development

Core member **| Intelligent Control System of Robotic Arm with Six Degrees of Freedom | SCUT**   2021.10

➢ Created a robot control system and the host computer via Python (software copyright)

➢ Implemented the functionalities of forward/inverse kinematic motion, track planning, target crawling, gestural interaction, posture estimation, voice control etc.

SKILLS

Programming Languages: Python, Java, C++, Golang, Matlab, SQL, Shell

Tools: Git, Numpy, Pandas, PyTorch, Sklearn, OpenCV, LaTeX

EXTRACURRICULAR ACTIVITIES

Secretary Department Officer **| College Student Union | SCUT**   2019.11-2022.01

➢ Organized many large student events including lantern riddle contest, All Staff Meeting etc.

➢ Handled a wide range of student affairs, coordinating for over 500 students

➢ Organized volunteer activities and donate clothes and stationery for poor children