

HAOYU LU

✉ haoyulu1022@hotmail.com · ☎ (+86) 150-2558-0366 · 🌐 HaoyuLu1022

🎓 EDUCATION

Beijing Normal University, Beijing, China

09/2020 – 07/2024 (selected)

B.S. in Computer Science and Technology, School of Artificial Intelligence

GPA: 3.8/4.0, **Rank:** 5/56

Relevant Courses (selected):

- *Compulsory Courses:* Data Structure (95), Principles of Computer Composition (95), Algorithm Design and Analysis (94), Probability Theory and Stochastic Process (93)
- *Optional Courses:* Introduction to Machine Learning (97), Multimedia Technology (93), Introduction to Big Data (95), Programming in JAVA (95)

👤 EXPERIENCE

Enhanced Semantic Segmentation of Multi-annual

Retrogressive Thaw Slumps by Domain Adaptation, Peking University

04/2023 – Present

Research Assistant Advised by: Prof. Xie Hu, Prof. Shanghang Zhang

- Chosen as one of the 2023 Emerging Engineering Interdisciplinary Projects, Peking University, the Fundamental Research Funds for the Central Universities
- Implemented Deeplab V3+ segmentation model integrated with gradient reversal layer and domain discriminator for domain adaptation
- Achieved an F1 score of 0.829 and a recall rate of 0.934, outperforming CycleGAN and fine-tuning

Key Laboratory of Beam Technology of Ministry of Education,

Beijing Normal University

09/2022 – Present

Research Assistant Advised by: Prof. Jianyong Jiang

- Exploring the combination of computer science and medical imaging techniques, especially in fields of positron emission tomography (PET) and Compton imaging
- Implemented models for medical image classification and segmentation from U-net to recent Segment Anything Model (SAM), having gained insights into both the imaging principle and related downstream tasks
- Currently working on physics-based imaging correction using methods of deep learning and reinforcement learning-aided imaging

Cannabis “Vaccacine”, Beijing Normal University

02/2022 – 11/2022

Leader of Modelling Group International Genetically Engineered Machine Competition

- Established mathematical models to describe the system of biochemical reactions of Cannabis “Vaccacine” based on differential equations, stochastic process and biochemical kinetics, etc.
- Implemented the models and simulated to explore the feasibility and efficiency of our biological pathway
- Discussed with wet-lab fellows to improve experiment design according to simulation results

Stress Detection Platform

Based on Heart Rate Variability, Beijing Normal University

06/2021 – 05/2022

Member Advised by: Prof. Hua Huang

- Chosen as one of 2021 Beijing Undergraduate Research and Innovation Projects
- Implemented denoising and smoothing algorithms to preprocess Photoplethysmography (PPG) signals sampled from a custom wristband, and calculated parameters related to HRV level in time and frequency domain
- Implemented deep learning based classification algorithm on preprocessed, labeled data, achieving great accuracy of 96.48%

HONORS AND AWARDS

<i>Silver Medal</i> , Internationally Genetically Engineered Machine Competition (Modelling)	11/2022
<i>1st Prize Scholarship</i> (10%), Beijing Normal University	10/2021, 10/2022
<i>1st Prize</i> , National English Contest for College Students	10/2022
<i>Excellent Student Cadre</i> , Beijing Normal University	10/2022
<i>2nd Prize</i> , Beijing College Students' 'Internet+' Innovation and Entrepreneurship Competition	08/2022
<i>Honorable Mention</i> , Interdisciplinary Contest In Modelling	05/2022
<i>Merit Student</i> , Beijing Normal University	10/2021

PUBLICATIONS

- Jiang, Jianyong, Jianlang Hua, Haihao Wang, Ziquan Yuan, Yuan Meng, **Haoyu Lu**, Steven Liu, Yunlai Chen, and Yuan-Chuan Tai. "A virtual-pinhole PET device for improving contrast recovery and enhancing lesion detectability of a one-meter-long PET scanner: a simulation study." *Physics in Medicine and Biology* (2023).

ACTIVITIES

Academic Contest Department,

School of Artificial Intelligence, Beijing Normal University

07/2021 – 07/2022

Leader

- Helped organize various school-level contests and academic events
- Hosted seminars with veteran engineers in industry, prestigious professors and high-level contestants in related competitions like ACM-ICPC
- Organized interesting, rewarding activities aiming at promoting professional growth, e.g., daily coding

SKILLS

- Development: proficient in
 - Programming languages: C/C++, Python and MATLAB
 - Deep learning frameworks: PyTorch and TensorFlow
 - Development environment configuration on Linux platforms
- Languages: English - Fluent (TOEFL: 108, CET-6: 605), Mandarin - Native