Haoqin Hong

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Education

- **Southwest University (SWU)** — Chongqing, China
  College: *Han Hong (Honours) College* — *September 2021 – July 2025*
  Degree: *BSc in Computer Science and Technology*
  GPA: *4.1/5.0* ***Weighted Average Score:*** *90.1*

- **University of California, Los Angeles (UCLA)** — Los Angeles, USA
  Project: *Credits Transfer Project in Data Science (Visiting Student)* — *September 2022 – December 2022*
  Courses: *Introduction to Data Science (A), Data Science Fundamentals (A-), Machine Learning with Python (A+)*

Publications

- **Haoqin Hong**, Yue Zhou, Xiangyu Shu, Xiaofang Hu, "CCSPNet-Joint: Efficient Joint Training Method for Traffic Sign Detection Under Extreme Conditions." **(Submitted to ICASSP 2024)**

Invention Patents

- Yue Zhou, He Xiao, Xiaofang Hu, **Haoqin Hong**, Shukai Duan,"Voice Recognition System and Method Based on Lightweight Transformer Network", Chinese Invention Patent.
- Yue Zhou, He Xiao, Xiaofang Hu, **Haoqin Hong**, Shukai Duan, "Memristor-based Text Emotion Detection System and Method", Chinese Invention Patent.

Honors and Awards

- Southwest University Undergraduate First Class Scholarship (Rank 1/40). *Oct 2023*
- Southwest University Undergraduate Third Class Scholarship (Rank 10/40). *Oct 2022*
- Special First Class Scholarship for Overseas Study or Internship of Han Hong College. *Nov 2023*
- Southwest University Academic Science and Technology Award. *Oct 2023*
- Outstanding Student Union Staff of Han Hong College. *Jul 2022*

Research and Internship Experience

- **Brain-like Computing and Intelligent Control Laboratory** — Chongqing, China
  Undergraduate Research Assistant — *March 2022 – Present*
  - **Research Background**: I joined the algorithms research group formed by Professor Xiaofang Hu, Associate Dean of the School of Artificial Intelligence at Southwest University, with a focus on the design of brain-like intelligence algorithms and their deployment on memristor chips.
  - **Research Direction**: Computer Vision, Embedded Vision, Brain-like Computing, Memoristor Neural Networks (Advisors: Xiaofang Hu, Yue Zhou).

- **Institute of Automation, Chinese Academy of Sciences** — Beijing, China
  AI Algorithm Research Intern (Part-time Assistant) — *August 2022 – September 2022*
  - **Internship Content**: During my internship, I primarily utilized the PaddlePaddle deep learning platform from Baidu to reproduce and port cutting-edge neural network algorithms in the fields of computer vision and natural language processing. Additionally, I conducted research on text-to-vision cross-modal techniques and applications. By carefully studying the papers and open-source code of these algorithms, I successfully constructed corresponding models in the PaddlePaddle framework and made necessary adjustments and optimizations to achieve good performance and results.

Project Experience

- **Chinese Academy of Sciences College Student Innovation Training Program** — Beijing, China
  National Astronomical Observatory Innovation Traning Project (Advisors: A-Li Luo). — *July 2023 – Present*
  - **Project Title**: Image Processing, Object Recognition, and Segmentation Based on Astronomical Large Model.
  - **Project Description**: The goal of this project is to utilize a generalized image-based model to address three downstream tasks in astronomical images: identification, classification, and segmentation. To achieve this, the project requires the utilization of Galaxy Zoo's morphological classifications for galaxies and LAMOST's spectral classifications for stars and quasars to enhance the large-scale model through reinforcement learning. Subsequently, fine-tuning will be applied to SDSS sky survey images to accomplish tasks such as object detection, object classification, and image segmentation.

- **Provincial-Level College Student Innovation Training Program** — Chongqing, China
  Project Leader — *March 2023 – Present*
  - **Project Title**: Research and Application of Multi-Layer Attention Networks based on Memristors in Natural Language Processing.
  - **Project Description**: This project aims to utilize the memristor-based multi-layer attention network algorithm to provide a novel neuromorphic computing architecture in natural language processing. It aims to provide feasible algorithmic models and deployment plans for achieving a low power consumption, high computational power, and integrated storage and computation neuromorphic computing system.

- **University-Level College Student Innovation Training Program** Chongqing, China
  Project Leader *March 2022 – May 2023*
  - **Project Title**: Artificial Intelligence Suicide Intervention and Big Data Positive Psychological Suggestion Content Delivery System.
  - **Project Description**: The goal of this project is to design and implement a suicide semantic analysis model based on deep learning methods and natural language processing techniques. Additionally, a suicide behavior identification semantic analysis database platform will be developed. Through this platform, the aim is to enhance the accuracy and efficiency of suicide intervention.

Competition Awards

- Bronze Medal in Kaggle Research Competition: Google - Fast or Slow? Predict AI Model Runtime. *Nov 2023*
- National First Prize in the China Robotics and Artificial Intelligence Competition. *Jun 2023*
- National First Prize in the DJI RoboMaster of the National College Student Robot Competition. *May 2023*
- National Second Prize in the Contemporary Undergraduate Mathematical Contest in Modeling. *Nov 2023*
- National Third Prize in the Chinese Collegiate Computing Competition. *May 2023*
- Provincial First Prize in the National Undergraduate Electronics Design Contest. *Aug 2023*
- Provincial First Prize in the Contemporary Undergraduate Mathematical Contest in Modeling. *Nov 2022*

Skills Summary

- **Language**: CET-6(565), IELTS(6.5)
- **Programming**: Python, R, C/C++, Matlab
- **Tools**: Ubuntu, OpenCV, PyTorch, ROS, SLAM Navigation, C++ STL

Extracurricular Experience

- **Southwest University Robotics Innovation Lab** Chongqing, China
  Vision and Decision Algorithms Team Leader *November 2022– Present*
- **Southwest University Student Union** Chongqing, China
  Head of Life Practice and Rights Department *October 2022 - July 2023*