BUTIAN XIONG
Mir Hall 1011 291 Deahak-ro, Yuseong-gu, Daejeon, South Korea 34141 | +82 010-17380-17833 | xiongbutian768@gmail.com

Profile Objective

- Junior undergraduate at the Chinese University of Hong Kong (Shenzhen) looking for a summer internship related to AI-driven Robotics perception and decision making. Motivated researcher looking forward to a practical project.

Skills

- Programming Skills: Python, Pytorch, Flask, TensorFlow, Java, C++, HTML, SQL, Svelte, C, Verilog
- Operating System and Platform: Linux User, Windows Fluent User. Microsoft 365, Adobe Premier, Adobe Acrobat, Keil v4, Fluent User, Blender 3D Designer.
- Technical Skills: Computer Vision, Data Analysis, Website builder, Cortex-M3 Development, Streamer.
- Language Skills: Mandaring, native; English, fluent; Japanese, intermediate; Korean, intermediate.

Education

Bachelor in Computer Engineering | Chinese University of Hong Kong (Shenzhen) 2020-2024 (Expected)
- GPA: 3.655/4, Ranking 6/103 in Computer Engineering, TOEFL: 103/120
- Related coursework: Image Processing and Computer Vision, Microprocessors and Computer Systems, Artificial Intelligence in Medical Imaging and Health, Ordinary Differential Equation

Exchange Student in Electrical Engineering | Korea Advance Institute of Science & Technology | (2023 Spring)
- Related coursework: Multi-disciplinary Robotics, Communication Engineering, Computer Network.

Experiences

Research Assistant - June 2022 – Present – Chinese University of Hong Kong (Shenzhen) Robotic and Artificial Intelligence Lab
- Implemented prototype entropy-based algorithm for logits post-processing, achieved at least SOTA performance.
- Wrote ""Open Set Scene Recognition with Class Relevance Learning for Out-of-Distribution Detection" as a candidate paper in IROS 2023
- Designed new loss function base on inter and intra-class relationship. Implementing it with Pytorch. Achieved 1% overall accuracy improvement in multiple scene dataset.
- Implementing APEX acceleration method for ResNet model and ViT model. Achieved 4 times acceleration in training.
- Design open world classification algorithm using CLIP models and representation learning technique.
- Implementing incremental learning algorithm such as LWF and EWC

Intern - April 2022 – Sep 2022 - Shenzhen Research Institute of Big Data
- Utilized Blender platform to transform the generated point cloud to 3D digital face, achieved offline transformation.
- Applied mediapipe to capture key points on human's face expression, achieved online recording.

Intern- Oct 2022 – Present - China Information and Communication Technologies Group Company
- Classified chips and detect malfunction on chips using group expertise algorithm, achieved over 40% improvement compare to original algorithm

Project Team Leader – Jan 2021 – May 2021 – Helphub in the Chinese University of Hong Kong (Shenzhen)
- Led the personality test website construction. Communicated with artist on the designing of website. Over 500 students joined this activity.

Teaching Assistant Jan 2022 – Jan – 2023 - Chinese University of Hong Kong (Shenzhen)
- Database System (Course Code CSC3170) 2022 Autumn – School of Science and Engineering
  1. Lectured 3 tutorial sessions for four weeks, taught over 60 students.
  2. Designed related course content on how to construct a front end and how to connect the front and back end.
  3. Co-worked with other PhD students responsible for project design.
  4. Held 2 hours office period per week for 16 weeks.
- Basic English (Course Code ENG1002) 2021 Autumn – School of Humanities and Social Science
  1. Lectured 1 tutorial sessions for 12 weeks, taught about 15 students in speaking and listening skills
  2. Designed lecture material for reading and writing.

International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2022
- Attended tutorial for energy-based method in deep learning and special topic for audio to text conversion. Enhanced my experience in audio processing field.

Honor and Award

- Dean's list 2020-2021 School of Science and Engineering (Chinese University of Hong Kong, Shenzhen), Dean's list 2020-2021 School of Science and Engineering (Chinese University of Hong Kong, Shenzhen),
- Academic Performance Award 2021-2022 (Chinese University of Hong Kong, Shenzhen).
- H Prize in 2022 Mathematical Contest in Modeling (the US contest)
- Third Prize in 2021 Mathematical Contest in Modeling (China contest)

Selected Project

- **Robot Operating System (Working On)**: Building a vision-based robot on ball fetching problem (ROS, Gazebo)
- **Socket Programing**: Built an encryption protocol for data transform (C)
- **Microprocessor Game Design**: Cortex-M3 based STM32 chip game implementation from scratch. (STM32 in C)
- **Computer Architecture**: Pipe lining CPU implementation using Verilog. (ARM in Verilog)
- **Natural Language Processing and Web Design**: Online Sentiment Analysis using Pytorch, Flask and SQL. (Python, SQL)

Hobbies

- Violin, Chinese University of Hong Kong (Shenzhen) Orchestra.
- Kendo: Korea Advanced Institute of Science and Technology Kendo club.