Kaiwen Bian

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Undergraduate in Data Science & Cognitive Behavioral Neuroscience

Introduction & Inspiration

I am a Data Science student double majoring in Cognitive Behavioral Neuroscience at University of California in San Diego (UCSD) since September 2022. I am passionate about making data science and machine learning tools an "bridge" to discovering more in every single scientific field both in academia and in the industry. My passion goes beyond Data Science into fields of Neuroscience, Biology, and Exercise Physiology. I am extremely interested in the intersection between Data Science and Neuroscience for developing systems/algorithms with better performances. I am fluent in both Chinese and English, and open-minded for new ideas and learning opportunities.

Education

University of California, San Diego, USA — 2022.09 –
BS, Data Science
BS, Cogitative Behavioral Neuroscience

Quality School International - QSI, Chengdu, China — 2016.01 – 2022.06
Honored Degree of International Baccalaureate

Experiences

Jan 2024 – Present

Salk Institute, La Jolla, CA
Advisor: Prof. Talmo Pereira
The VNL project is a collaboration between Salk and Harvard University to create a working RL pipeline for generating the "brains" for a virtual rodent. We try to create an integrated Reinforcement Learning system using Jax supported brax and dm_control for establishing an environment, then using Imitation Learning to "learn" behavior of actual rodent.

May 2023 – Present

University of California, San Diego, La Jolla, CA
Advisor: Prof. Sean Trott
Researching Affordance Embodied Simulation's presences in Multimodal models through the UCSD Faculty Mentorship Program (started Sep 2023). We try to improve the reliability of machine learning models through examining the degree of models' "understanding" of the subtle keys in human languages and how it is used to map the world we know.

Jul 2023 – Sep 2023

Intel Data Science Summer Project, Chengdu, Sichuan
Supervisor: Runner Yang
Followed Intel Chengdu's senior Data Scientists to experience data science in the industry and participated in a few small data projects over the summer mainly involving data cleaning & reformatting, automation, and using Power BI for Intel planning's data analysis.

Jun 2021 – Jun 2022

Intel & Kang-Hua Center Joint Project, Chengdu, Sichuan
Supervisor: Dr. Jiawei Wu
Studying factors contributing to Biodiversity in a Mega-city (Chengdu). I examined chemical, biological, human, and climate factor that caused the prosperousness of the wetland in Pi-du district and created a scientific model that captures details in each aspect in a paper/report, which was recognized by the Kang-Hua Ecosystem center for facilitating their environmental protection cause.

Apr 2021 – Oct 2021

Sichuan University, Chengdu, Sichuan
Supervisor: Prof. Jeungphill Hanne
Researching on the unidirectional motion in the sub-microbiology. We produced unpublished manuscript discussing our perspective and potential theories involving the unidirectional motion.

Feb 2019 – Feb 2021	**Sichuan University & QSI Joint Project,** Chengdu, Sichuan

Supervisor: Prof. Jangho Yoon

I led a team for ISEF project using Python, MATLAB, Phasic Deconvolution Analysis, and GSR hardware to create a sensor-based emotional detection system. We received the American Psychological Association Award from ISEF 2021 after presenting in the ISEF 2021 conference.

Scholarships & Awards

2021 **Prominent Teacher Award for Global Tour Class**
Intel's recognizing 2.5 years (2019 – 2022) of contribution to volunteering causes.

2021 **The American Psychological Association Award from ISEF**
Top awards to psychology & technology projects in ISEF 2021.

2019 **Certificate of Membership with National Honor Society**
One of the top organizations for high school students to contribute to social works and students benefits.

Presentations

2022 **International Baccalaureate at QSI**
Chengdu, Sichuan
Research presentation on fluid dynamics' study & the formation of potential flows for the Honored Degree of International Baccalaureate.

2021 **ISEF China**
Chengdu, Sichuan
Research presentation on sensor-based emotional detection system.

Leadership & Social Services

Nov 2019 – Jun 2022	**Intel Volunteer Program**

I initiated and led the Global Tour Class volunteer program where we regularly visited local primary school for English lessons. I received the Prominent Teacher Award for Global Tour Class from Intel and the program continued to benefit others after my graduation.

Mar 2021 – Jun 2022	**Quality School International Chengdu**

I was the president of QSI Student Council & Board Member of National Honor Society where I managed executive board of 10+ members to ran weekly meetings and deliver events and benefits to student population.

Skills

Data Science: Python, Panda & EDA, Regular Expression, Modeling, HTTP, Power BI, Java, Data Structure.
ML: Reinforcement Learning (brax, dm_control, MDP Algorithms), Py-torch, Scikit-learn.
Mathematics: Stochastic Processes, Prob & Stat, Search Algorithms, Linear Algebra, Vector Calculus, Apply Graph Theory
Neuroscience: System & Cognitive Neuroscience, Neuroanatomy.
Languages: Fluent Chinese and English.
Sports Science & Hobbies: Exercise Physiology, Nutrition, Skateboarding (6+ years), Strength Training, Triathlon.