# Junbo Shen

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*Education*

**Washington University in St. Louis, MO, USA** Aug. 2022 – Present
*B.Sc. in Computer Science* *GPA: N/A*

**The Chinese University of Hong Kong, Hong Kong** Sep. 2020 – Jun. 2022
*B.Sc. in Computer Science, ELITE Stream* *GPA: 3.77/4.00 (Top 10%)*

**Peking University Summer School** Jul. 2021 – Aug. 2021
*Coursework: Media and International Relations, Ancient Chinese Culture*

**Selected Coursework**: Data Structures (C/C++), Fundamentals of Machine Learning, Intro. to Artificial Intelligence(Python), Cryptography, Computer Organization & Design (RISC-V, C)

*Research and Work Experience*

**Undergraduate Research Assistant** Jun. 2022 – Present
*The Chinese University of Hong Kong, Hong Kong* *Supervisor: Prof. Yu Li*
USPNet: unbiased organism-agnostic signal peptide predictor with deep protein language model (In preparation)

- Presented **USPNet**, a signal peptide prediction and cleavage site prediction framework based on deep protein language models.
- We propose to use label distribution-aware margin (**LDAM**) loss to handle the data imbalance problem and introduce **MSA** and **ESM** embeddings to achieve an end-to-end organism-agnostic model. The attention-based **BiLSTM** architecture allows for maximizing the possibilities to integrate and extract relationships among different positions of protein sequences.
- Conducted extensive experiments to evaluate the proposed method. **USPNet** achieves superior classification performance and outperforms the state-of-the-art **SignalP6.0** method.

**Summer Research Internship and Term-time Student Helper** Jun. 2021 – Dec.2021
*The Chinese University of Hong Kong, Hong Kong* *Supervisor: Dr. Dongkun Han*
Smart Aquaponics System

- Constructed an automated aquaponics system with sensors, cycling, fish-feeding, and vegetable-irrigation systems that can be monitored and controlled by apps, with the aim to promote environmental conservation with green technology.(Embedded programming, IoT, APP development)
- Analyzed sensors' data to optimize the automated system and reduce cost for better practicality.
- Developed web and mobile apps to monitor and control the system with Wi-Fi and Bluetooth.

*Other Experience*

**WISE Forum, a tech community in CUHK** Sep. 2021 – Present
*Member*

- Joined talks about tech use and innovation.
- Shared experience with Linux systems, APP development, research, etc.
- Explored the possibilities of STEM outside of the classroom.

**Promoting Green Technology** Jun. 2021 – 12. 2021
*Leader*

- Promoted environmentally friendly aquaponics technology through CUHK Smart Garden to the public with teenage visitors from off-campus.

**The Hong Kong Institution of Engineers** Jul. 2021 – Mar. 2022

*Member*

- Regularly attended engineering seminars and interacted with engineers from local businesses.

**College Toastmaster Club** Sep. 2020 – Jan. 2021

*Member*

- Learned and practiced public speaking skills with the help of professionals invited by the club.

## *Awards & Honors*

**Master's List**
*Wu Yee Sun College, The Chinese University of Hong Kong* *2020-2021*
Acknowledge the top college student in each academic program of each class.

**ELITE Stream Scholarship**
*Faculty of Engineering, The Chinese University of Hong Kong* *2020-2021*
HK$16,000 to ELITE Stream students with excellent academic performance.

**Academic Excellence Scholarship**
*The Chinese University of Hong Kong* *2020-2021*
HK$10,000 to the student with the highest Year GPA in each academic program.

**Dean's List**
*Faculty of Engineering, The Chinese University of Hong Kong* *2020-2021*
Awarded to the Top 10% of engineering students.

**Innovation and Creativity Award**
*Wu Yee Sun College, The Chinese University of Hong Kong* *2021-2022*
HK $7,000 to students demonstrating innovation and a high degree of creativity. (Smart aquaponics system)

**Environmental Conservation Award**
*Wu Yee Sun College, The Chinese University of Hong Kong* *2021-2022*
HK $7,000 to students with extraordinary contributions to environmental conservation. (Green Technology)

## *Specialized Skills*

**Computer Skills**: Python(Pytorch), C/C++, Java, LINUX, LATEX, MATLAB, RISC-V Assembly, Perl, Flutter with Dart (Basic)
**Languages**: English (Proficient), Mandarin (Native), Korean (Conversational), Cantonese (Beginner)

## *Other Interests*

Soccer, Drawing/Sketching (Proficient), Piano (Proficient)