

# SYDNEY TZU-JUNG FANG

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## SKILLS

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- Python, Jira, Arduino, C++, Java, Swift, AWS, Tensorflow, PyTorch, Machine Learning, AI, Scrum, Kanban, SQL, Html, Php, CSS, Javascript, Git, Angular, NLP, React, Blender, Unity, Django, RestAPI, Docker, NodeJS, R
- Linguistic: English, Mandarin, Cantonese, Japanese, Taiwanese, French (limited)

## EDUCATION

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**The University of British Columbia** - Double major in [Computer Science](#) and [Biochemistry](#) NOV 2023

**Relevant courses:** Algorithm analysis, advanced database systems, data structures, operating systems, web programming, cloud computing, artificial intelligence, machine architecture, data analysis, discrete math

## RELEVANT EXPERIENCE

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**Software Engineer Project Team Lead** OCT 2021 - PRESENT

**Canadian Space Agency, SEDS - CAN-SBX**

<https://www.asc-csa.gc.ca/eng/sciences/balloons/campaign-2022.asp>

- Winner of the CAN-SBX competition for 2 consecutive years, worked closely with the Canadian Space Agency
- Proposed a hardware and software solution to reduce the stratospheric radiation effects on single event upsets
- Implemented a program that detects and reverses bit flips, and fills planar and SATA SSDs with binary data
- Implemented a program that generates graphical data for statistical analysis
- Created a website to document the process and information about our team
- Planned software testing using agile methods to ensure payload survival in hostile stratospheric environment
- **Skills:** [Java](#), [Python](#), [C++](#), [PHP](#), [HTML](#), [CSS](#), [JS](#), [AWS](#) - EC2

**Natural Language Processing Researcher** JUL 2022 - PRESENT

**The University of British Columbia**

- Building a machine learning model that tracks and translates human body, hand and face movement gestures into different linguistic
- Research and implementation of translation of minority dialects and body gestures with integrated emotions
- **Skills:** [Machine learning](#), [Tensorflow](#), [Python](#), [Deep neural networks](#), [Docker](#)

**Software Engineer Team Lead** SEP 2022 - APR 2023

**The University of British Columbia**

- Delivered a web platform that reduces food waste and generates government related documents for users
- Applied scrum and agile testing developing methods
- Resolved conflict between client and the university during an IP disagreement, and handled project transformation
- **Skills:** [NodeJS](#), [Python](#), [HTML](#), [JS](#), [Docker](#), [React](#), [CSS](#), [AxiosAPI](#), [Git](#), [SQL](#), [Jira](#), [Figma](#), [Scrum](#), [Agile](#)

**Front-end/Machine Learning Engineer** MAR 2023

**[Personal Website Project]**

- Implemented a chatbot model and 3D animations on my interactive website using a sequential model and NLTK
- Full website implementation from scratch including but not limited to UI design, data collection and processing (using NLP techniques), building the neural networks and training the model
- **Skills:** [ML](#), [NLP](#), [Sequential model](#), [NLTK](#), [Python](#), [Keras](#), [Tensorflow](#), [Json](#), [YML](#), [HTML](#), [CSS](#), [SCSS](#), [JS](#), [Flask](#), [AWS](#) - EC2, [Nginx](#), [Unicorn](#), [Ubuntu](#)

**Swift App Developer** NOV 2022

**[Personal Project]**

- Developed a colour matching game for children using collisions in SwiftUI
- Users can drag different circles of colour and match it to its corresponding colour, with the intentions of the product of familiarizing children with different colours
- **Skills:** [Swift](#), [SwiftUI Collisions](#), [Game life cycle](#), [Agile](#)

**Data Analyst**

JUN 2022 - SEP 2022

**The University of British Columbia - Single molecule Mechanobiology lab**

- Write optimizing scripts and clean up large cell datasets collected by biologists and chemists in the lab
- Pre-processed data on DNA tension probes in human cells to find correlation between tether strength and its physiological environment
- Initiated and lead the migration of existing codes and database to GitHub
- Created an interactive website for the 2022 Okanagan Biophysics conference for user registration
- **Skills:** R, Matlab, Python, Fiji ImageJ, PyUnit, Git, HTML, JS, CSS, Angular, AWS, NET framework, Agile testing, Jira

**Swift App Developer**

JUL 2022

**[Personal Project]**

- Developed a timer that integrated the pomodoro study technique
- Timer allows the users to set and cycle through different lengths of study and break time
- **Skills:** Swift, SwiftUI, Figma

**Software Research Assistant**

SEP 2019 - APR 2020

**The University of British Columbia**

- Mapped the blueprint of the Okanagan Waterway into a interactive 3D environment using Blender & Unity
- 3D modelled and designed real-time objects including but not limited to animals, nature and architectural structures
- Automated scenes, sequence assembly and repetitive tasks
- **Skills:** Blender, Unity, C++, Python

**COMPETITIONS**

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**Software Engineer Team Lead**

NOV 25 - 27 2022

**Major League Hacking, BC Hacks 2022**

<https://devpost.com/software/parcade>

- Led a team of 3 to build an interactive game within 48 hours where users can interact with on-screen items through a camera using physical movements. The program maps out and tracks human body and hand movements.
- **Skills:** HTML, CSS, JS, Angular, OpenCV, Mediapipe, Python

**Software Engineer Team Lead**

JAN 18 - 19 2020

**Major League Hacking, BC Hacks 2020**

<https://devpost.com/software/rumino>

- Led a team of 3 to build a motile robot that detects the dimensions of a room using an ultrasonic sensor in 24 hours
- Coded a database and an application that connects to the robot via bluetooth to display the data
- **Skills:** Java, Arduino, Python, MySQL

**EXTRA CURRICULAR**

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**Stratoneers Club (Co-founder) | The University of British Columbia**

SEP 2020 - PRESENT

**Aerospace Club | The University of British Columbia**

SEP 2020 - APR 2023

**Emergency First Response Team | The University of British Columbia**

SEP 2019 - APR 2022

**Motorsports Club | The University of British Columbia**

SEP 2019 - APR 2021

**Astronomy Club | The University of British Columbia**

SEP 2019 - APR 2023