# YOUYOU YANG

Email : youyou.yang@mail.mcgill.ca
Mobile : (438)941-6404
Website: wppqywq.github.io/youyou_yang.github.io/ Github: wppqywq


## Summary


Tech-savvy graduate seeking a role in software development or data science starting Jan 2024 in Montreal. Proficient in Python, C, SQL, and Bash with a quick learning curve. Strong in logical reasoning and adaptable to new technologies.


## Education

- **Mcgill University** Montréal, CA
  *Bachelor of Science in Physics and Computer Science* *Aug. 2019 – June. 2023*
  - **Relevant Coursework**: Data Science, Machine Learning, Algorithm Design, Quantum Mechanics, Astrophysics, Mathematical Analysis, Algebra and etc.

## Skills

- **Technical Skills**:
  - **Data Sience Skills:** Experienced Python developer adept in NumPy, SciPy, Pandas, TensorFlow, and Scikit-learn for data analysis and machine learning.
  - **Programming Skills:** Proficient in C, Bash, SQL, Ocaml, and Matlab for software development, scripting, database management, and scientific computing.
  - **Hardware Design:** Familiar with Arduino and Raspberry Pi platforms.
  - **Tools and OS:** Skilled in Linux operating system, proficient in JIRA and Git for version control, and experienced with LaTeXfor document preparation. Familiar with Microsoft Office suite.
- **Language Skills**: Fluent in English and Mandarin. Basic proficiency in French.

## Work Experience

- **BorgWarner Technical center** Shanghai, CN
  *Software Development Intern* *July 2021 - August 2021*
  - **Developed Communication Protocol**: Engineered AutoSAR-based communication protocols for Geely Lotus cars, optimizing efficiency with **Python-to-C** scripts.
  - **Led Upper Computer Modularization**: Led software modularization for an automated car project. Achieving timely and accurate transportation using the **Python ROS** package, and Bash script on **Raspberry Pi**, ensuring project success.
- **Dreame Tech** Suzhou, CN
  *Software Testing Intern* *May 2021 - June 2021*
  - **Firmware Testing and Debugging**: Employed systematic testing methodologies on Dreame Z10 Robot Vacuum cleaner using **Bash** scripts. Effectively managing issues and tracking progress through **Jira** for streamlined development and quality assurance.

## Research Experience

- **McGill ATLAS Group** Montréal, CA
  *Undergraduate Researcher* *May 2023 - August 2023*
  - **Research on Digital Filtering Algorithms for ATLAS Liquid Argon Calorimeter**:
    - Supervised by Prof. Brigitte Vachon.
    - Funded by the Natural Sciences and Engineering Research Council (**NSERC**).
    - Applied **Python** to develop and identify the optimal **digital filtering** solution for energy reconstruction in the ATLAS calorimeter at CERN, integrating **time series analysis** techniques for enhanced signal processing.
- **McGill ATLAS Group** Montréal, CA
  *Undergraduate Researcher* *May 2022 - Dec 2022*

- **Studies of gauge bosons self-interactions in high-energy proton-proton collisions**:
  - Supervisors: Prof. Brigitte Vachon and John McGowan.
  - Funded by McGill Science Undergraduate Research Awards (**SURA**s).
  - Employed PyROOT for data analysis within the frame of Standard Model Effective Field Theory(**SMEFT**), to search for unique particle interactions.
  - Utilized **MLE** methods in **Python** to setting constrains on Effective Field Theory Lagrangian, accounting for systematic uncertainties.

## Technical Projects

- ***May 2023 - July 2023*: Developing a Chinese Restaurant Process (CRP) with Gibbs Sampling**: Implemented **Gibbs sampling** in a CRP model in **Python** to solve **infinite Gaussian mixture modeling** challenges. Extended the traditional **CRP** model to accommodate an unbounded number of mixture components, enabling flexible modeling of complex data distributions.
- **Apr 2023: Building an Electrocardiogram (ECG) with Circuit and Arduino**: Engineered an ECG **circuit** including a differential amplifier, notch filter, and low-pass filter, and visualized signals using **Arduino** and oscilloscope.
- **May 2022: Measuring of Lambda Cold Dark Matter parameters with MCMC**: Employed the Markov chain Monte Carlo (**MCMC**) method in **Python** to fit the **CMB** data to the **$\Lambda$CDM model**, focusing on the density parameters and Hubble's constant.
- **May 2022: Monte Carlo Tree Search for the Colosseum Survival game**: Built an intelligent agent using **Monte Carlo Tree Search (MCTS)** for the Colosseum Survival game strategy. Outperformed most random opponents with efficient next-step predictions and **minimal memory** usage.

## Additional Experience:

- **Published Documentation**:
  - **Jul 2022:** J. P. Mc Gowan, Z. Wang, B. P. Honan, *et al.*, "Observation and differential measurement of electroweak production of W(l,nu)gamma + jets," CERN, Geneva, Tech. Rep., 2022. [Online]. Available: https://cds.cern.ch/record/2819968
- **Talks** :
  - **Aug 2022:** Summer Undergraduate Research Showcase, McGill University
    Contributed talk: *Sensitivity studies in the search for new physics in p-p collisions at the LHC.*
  - **Aug 2022:** ATLAS Canada Summer Student Presentations, CERN
    Contributed talk: *Sensitivity studies in the search for new physics in p-p collisions at the LHC (same).*
- **Hackathon**:
  - **Jan 2022:** Hack Mcwics 22, McGill Women in Computer Science: Won the Most Practical Award for developing a website of Serving Size Converter using **HTML+JavaScript**.