

Yihang Lin

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EDUCATION

University of Toronto Toronto, ON, Canada 2019.09 - 2024.06(Expected)

- Bachelor in **Electrical and Computer Engineering**, Faculty of Applied Science and Engineering
- **Minor in Artificial Intelligence Engineering** and Business Certificate

Certificate: ICME Fundamentals of Data Science Certificate (Intro.to Python, Linear Algebra, Privacy and Responsible AI, Intro to ML, Intro to DL)

WORK EXPERIENCE

Software Backend Engineer Intern Tencent Technology (Beijing) Co., Ltd. 2022.09 – 2023.09

- Developed functional and responsive backend APIs/CGIs, based on the HTTP/HTTPs protocol, for various backend services using PHP, SQL, Golang, and Python with MVC, Laravel, and gRPC frameworks, **achieved average response time in 200ms – 500ms with optimized SQL queries.**
- Ensured data safety and prevented SQL-injection using PDO, input validation, queries parametrization, and escaping.
- Enhanced the scalability and usability of data dictionary by adding the ability to query and modify data, and to browse schemas of various databases and relations. The design can also be integrated with other systems for future development.
- Independently implemented an interactive visualization model using Vue.JS, eCharts, and Element for the data management platform, facilitating maintenance process by allowing employees to view pictorial representations of tables and databases.
- Regular reported weekly progresses to team leader and frequently communicated with other colleagues.

Intern on Productivity and Improvements ICBC S.A. Argentina 2018.07

- Collected data on productivity and efficiency of five operation divisions, consisting of 200 employees, based on the LEAN methodology published by McKinsey and Company.
- Scheduled agendas and reviewed progresses with the head of each operation teams, recording factors such as rate of absence, number of tickets completed, and specific issues that needs to be discussed.
- Reported the KPIs and interview summaries, in English and Spanish, to executives on a daily basis.

SELECTED PROJECTS

Deep Neural Network in Parsing and Phenotyping Electronic Health Records Toronto, ON, Canada 2023.09 – Present

- Preprocessing clinical notes with techniques such as tokenization, lemmatization, and word embeddings, ensuring uniformity.
- Developing a semi-supervised learning model with Word2Vec and GloVe in NLP to translate unstructured clinical data to compact and structured data.
- Constructing a CNN, LSTM, and BERT based model to realize a supervised multi-class classification model that is able to parse and phenotype clinical notes with interested characteristics.

Geographic Information System (GIS) Development Toronto, ON, Canada 2021.01 – 2021.04

- Led in a team of two to develop a GIS application with a functional UI using C++, Glade, GTK Graphics Libraries and unit tests libraries on faculty approved DebianOS (Linux) machines. Used SSH and VNC Viewer to gain remote access.
- Queried open-source APIs published by ArcGIS and OSMdatabase to obtain Geographic information of different cities.
- Used Hash Maps and Trie to process complicated and large data sets, **reduced response time by 20% - 30%** when comparing to the initial implementation.
- Implemented shortest path finding feature using Dijkstra and Priority Queue, **returning results in 300ms – 500ms.**

Smash La Fruta (Game Development) Toronto, ON, Canada 2021.04

- Developed a game inspired by Fruit Ninja using C on CUPUlator, which is a DE1-SoC simulation software.
- Designed an interactive UI with in-game objects and physics logic, utilizing suitable mathematical functions to ensure performance and UX. Guaranteed gameplay smoothness using double pixel buffering on VGA controller.
- Implemented functional PS/2 mouse interrupt, allowing users to interact with game objects.

SUMMARY OF SKILLS AND TOOLS

Programming Languages: Python, C, C++, PHP, Golang, SQL, Verilog/System Verilog, ARM V7 Assembly, JavaScript, Shell
Tools: MATLAB, MySQL, MariaDB, PostgreSQL, Redis, Nginx, Git, GitHub, Jira, LTSPICE, NumPy, Pytorch, Jupyter Notebook, Google Colab

Frameworks & Protocols: MVC, Laravel, gRPC, Flask, VueJs, Apache eCharts, Element, HTTP/HTTPS protocols.