

Zixuan(Sunny) Deng

Victoria, BC

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Solution-driven Software Engineer adept at contributing to highly collaborative work environment, finding solutions and improving user experience with technical knowledge to create cool digital experiences. Designed and developed web applications across multiple APIs, third-party integrations and databases.

Education

- **University of Victoria** **Victoria, BC**
M.Eng. Applied Data Science, *2021–present*
- **Wilfrid Laurier University** **Waterloo, ON**
BA. Mathematics, Concentration in Statistics and Data Analytics *2016–2020*

Research Projects

Prediction of Extreme Weather Events using Statistical Learning Techniques *Sep 2019 – April 2020*

- Analyzed the pattern of weather dataset in R using various methods such as Supervised Learning and Time Series Analysis to predict future extreme weather events. Implement Logistic regression, LDA, QDA, Decision Tree, Random Forest predictive model.
- Preprocessed the data to remove outliers and handle missing value by using Multiple Imputation. Selected features and solved class imbalance by oversampling technique.
- Evaluated the model and used Cross Validation, reached approximately 95 percentage accuracy.

Honors and Awards

- SAS Certified Specialist: Base Programming Using SAS 9.4
- Dean's Honour Roll 2019-2020

Technical and Personal skills

- **Programming Languages:** R, Python, SAS, MATLAB, Java, VBA, Git
- **Web Design:** Bootstrap, JQuery, React, Vue, Django, Flask, JavaScript, CSS, HTML
- **Database:** SQL Server, PostgreSQL, DynamoDB, Spark
- **Tools** LaTeX, VSCode, Chrome Dev Tool, AWS, Apache, MS Office
- **General Business Skills:** Good presentation skills, management skills, Works well in a team.

Personal Projects

Tech Blog

Nov 2020 – Dec 2020

- Built responsive front-end UI using HTML/CSS Flexbox and Bootstrap.
- Wrote RESTful APIs in Flask, enabled CORS for the web frontend to access the endpoints.
- Set up a Postgres SQL database and used a Flask ORM library for database operations
- Hosted the site on a Linux server on Digital Ocean, devoped using nginx and ansible
- Wrote unit and e2e tests to make sure code quality
- Updated tech blog as often and reached 20 visits on the first day released.

Restaurant Booking App

July 2020 – Oct 2020

- Built a hybrid mobile/web app in Flutter that allows user browsing nearby restaurants as well as creating bookings. Utilized provider architecture for state management.
- Wrote RESTful APIs in Flask, enabled CORS for the web frontend to access the endpoints.
- Hosted a EC2 Server in AWS, and configured security group to enable in-bound HTTP port 80 to allow browser read request.
- Set up NoSQL database using DynamoDB and used Pynamodb as Python ORM for database operations.
- Added in-memory cache mechanism using Redis to reduce latency for loading restaurant data.
- Used Docker and Docker-compose to create portable containers for both the Flask app and Redis.

SQL Tool for Movie Rental Report

May 2019 – June 2019

- Queried data from database by using advanced SQL skills, created monthly reports to monitor 1000 products' sales performance for each store location.
- Designed and developed inventory reports to track and monitor product availability at each store; provided organized data to support business decisions on replenishment strategies.

Volunteer Experience

○ Breaking Barriers: Cross Cultural Mental Health Club

Waterloo, ON

Treasurer

Jan 2019 – Aug 2019

I worked as treasurer at Breaking Barriers Mental Health Club for 8 months. During my employment, I managed 1,000 CAD in funds and used excel spreadsheets to help keep a running account of the funds in order to better use them and organize events. With the proper use of funds, we were able to hold many events during the 8 months, with a total of 100 participants, a 10 percent increase over last year.

○ JUMP Math

Waterloo, ON

Math Tutor

Sep 2017 – Nov 2017

I worked for JUMP Math for 2 months as a math tutor. I have tutored five to ten 7-9 grade students struggling in powers and polynomials, basic stats. During the 2 months tutoring, I have observed and evaluated students' performance behavior. To enhance student learning, I optimized wide range of instructional approaches. After the 2 months tutoring, some students were more enthusiastic about math and have improved their scores to a small extent.

Interests

- I have created a data science study group that has 10 people join. We share and discuss material related to machine learning, deep learning and AI information regularly.
- I like parlour music, and I love playing guitar and ukulele. I practice many times a week until I can play my favorite songs consistently and smoothly.

References

- Professor Sunny Wang, 519-8840710 x4845, Waterloo, ON, xwang@wlu.ca
- Professor Chester Weatherby, 519-8840710 x4142, Waterloo, ON, cweatherby@wlu.ca