

# Christal Zhang

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## SUMMARY OF SKILLS AND CERTIFICATIONS

**Profile:** 2+ years' experience in Machine Learning with a focus on model optimization

**Certifications:** AWS Developer Associate, Certified Associate in Python Programming, CFA 1, Tableau Desktop Specialist

**Programming languages and Tools:** Java, Python, AWS, CI/CD, SQL, Git, Docker, Spring Boot, R, Tableau, Power BI

## PROFESSIONAL EXPERIENCE

**Bell Canada, North York, ON**

**05/2022- 11/2022**

*Data Scientist*

- Researched and implemented a **deep learning model(ELM)** in TensorFlow for call volume prediction for Bell call centers, eliminating bias in the existing model and improving accuracy by 25%. (Reduced **RMSE** by 30%)
- Applied new Machine learning model for the **SR&ED** tax credit program in Canada, achieved 4 million in tax credits.
- Automated the **EDA** process using **Python** for outlier detection, reducing time spent by 99%. Combined with **ELM** model has lead to savings of up to 100k a year.
- Collaborated with engineer team to develop and maintain current **time-series model** (SARIMAX).

**Fintelics, North York, ON**

**05/2021-09/2021**

*Business Analyst, Internship*

- Design **SQL** script to automate data upload to Postgres SQL Database, reducing time spent by about 95%.
- Worked with the management team, evaluating on-going projects and activities from the engineering team in relation to the **SR&ED** tax incentive program. Planning, organizing, and executing SR&ED claims.
- Designed an internal guideline to apply for the SR&ED tax credit program, reducing the 3rd party consulting cost by more than **\$100,000**.

## PROJECTS

**Facial Recognition APP**

<https://github.com/Wanqing18/facial-recognition-app>

- Built a real time selfie capture program using **Kivy** and **OpenCV** to identify a person using their facial features.
- Combined 2 **CNN** models and customized layers to identify and measure facial features to determine if two images are the same person using **TensorFlow**.

**User Management API for project sharing Web Application**

<https://github.com/Project-Connect/project-connect>

- Built endpoints for user creation, update, get, delete functionality using **Spring Boot**, **JPA** and **H2 database**.
- Automated Deployment of full stack application to **AWS ECS** service using **Docker** and **Github Actions**.
- Used **Test Driven Design** to ensure clean, modular and organized code base.

**We App for Churn Rate Forecasting**

[https://github.com/Wanqing18/ML\\_Streamlit](https://github.com/Wanqing18/ML_Streamlit)

- Designed and implemented a website using **Streamlit** that applies Machine learning Model (**XGBoost**) into churn rate forecasting with customized hyperparameters.
- Automated the **EDA** process and all the predicted results are able to be visualized and downloaded.

**Mortgage Default Risk Estimation, Banking Credit Analysis**

<https://www.kaggle.com/code/christalz18/credit-risk-analytics>

- Provided quantitative analysis on mortgage data from Freddie Mac. Donated reliable data-cleaning process by applying and comparing different models (**XGBoosting**, **RandomForest**, **Logistic Regression**) for Loan Default risk prediction.
- Developed a deep learning model using **GoogleNet/Inception(CNN)** model in **sk-learn** library for results accuracy enhancement and offered comprehensive interpretations of the results.

## EDUCATION

Master of Financial Economics – University of Western Ontario, London, ON (3.75/4.0)

**09/2020-12/2021**

*Received Dean's Entrance Scholarship of the MFE 2020 Program*

Bachelor of Finance & Economics with Distinction – University of Toronto Rotman Commerce (3.91/4.0)

**09/2016-05/2020**