

Xiangzi (Ivory) Chen

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SUMMARY

- Proficient in programming languages including Python (Sklearn, Pandas, PyTorch, TensorFlow, GeoPandas, Numpy, Matplotlib, Seaborn, Beautiful Soup, Shapely), SQL, R, and SAS for data analysis and manipulation
- Experienced in using big data tools such as Spark (PySpark and Spark-SQL), Microsoft Azure, Power BI, Excel, and PowerPoint to handle large datasets and create visualizations
- Expertise in various analytics techniques such as exploratory analysis, hypothesis testing, clustering, predictive modelling, NLP, regression, statistical analysis, A/B testing, machine learning models

EDUCATION

University of Toronto, Toronto, ON

Sept 2021 - Nov 2022

Master of Engineering, Mechanical and Industrial Engineering (GPA:4.0)

Technical Emphasis: Analytics (Machine Learning and Data Analytics)

University of Toronto, Toronto, ON

Sept 2017 - June 2021

Honours Bachelor of Science with High Distinction (Dean's List for 2020, 2021)

Specialist: Applied Statistics; **Minor:** Mathematics, Economics

PROFESSIONAL EXPERIENCE

Centre for Maintenance Optimization and Reliability Engineering

Toronto, Canada

Research Analyst

Jan 2022 - Sept 2022

- Developed and implemented a hazardous material transportation model utilizing an extended SARSA reinforcement learning algorithm to determine the dynamic safe route for trucks, resulting in a 30% decrease in overall risk on the best route.
- Collected and preprocessed four months of traffic, weather, and population data within the Greater Toronto Area (GTA) using Python, transforming raw data into evidence-based insights to support the model results.
- Ensured data accuracy and completeness by performing data quality checks and implementing data cleaning procedures before ingestion. Delivered accurate geospatial data for successful implementation of the model.
- Conducted and visualized road networks in GTA, proposed a risk assessment methodology for determining transportation routes. Maintained progress and results reports to ensure timely completion and effective communication within the team.

Chuang Chuang Culture Communication Co., Ltd.

Shanghai, China

Data Analyst, Intern

May 2019 - Aug 2019

- Developed customer profiles by analyzing demographics and purchasing behavior using R Studio. Insights were provided to stakeholders to design a new consulting product which generated over 0.8 million US dollars since its launch in 2019.
- Collaborated with the marketing team to create potential client lists based on distinct customer feature clusters identified using K-Means clustering. Generated on average 30% improvement in email click-through rates.
- Increased customer satisfaction score by 15% by developing a customer satisfaction dashboard with Power BI for management.

ACADEMIC PROJECT

Gender and job Analysis with Azure Cloud Platform, University of Toronto

Jan 2022 - Apr 2022

- Developed and implemented an efficient data ingestion process by creating pipelines in Azure Data Factory to transfer csv files from Azure Blob storage to Azure SQL database; established scheduled triggers to automate the process.
- Utilized T-SQL queries in Azure SQL Database to analyze and interpret data by occupation and gender, providing valuable insights for decision-makers.

Vehicle License Plate Detection, University of Toronto

Jan 2022 - Apr 2022

- Utilized Keras to design and fine-tune a VGG16 Convolutional Neural Network (CNN) model for license plate detection. Achieved an impressive 88.1% accuracy rate in localizing bounding boxes of license plates in images.
- Built and fine-tuned a CNN classification model to identify the letters and digits on license plates with a 76.6% accuracy rate.
- Employed OpenCV in Python to create visualizations of the bounding box and character recognition results. Utilized image and video demonstrations to showcase the recognition accuracy from multiple angles and improve overall accuracy by 8%.

Canadian Election NLP Sentiment Classification Analysis, University of Toronto

Sept 2021 - Dec 2021

- Utilized Natural Language Processing techniques to analyze Twitter data during the 2021 Canadian Election, applying various machine learning algorithms including Logistic Regression, Decision Tree, Random Forest, KNN, SVM, Naive Bayes, and XGBoost to classify tweet sentiment.
- Achieved 97.4% accuracy in predicting public attitudes toward the election by implementing the best-performing model.
- Developed a comprehensive understanding of public sentiment by conducting extensive exploratory data analysis and data visualization techniques, providing valuable insights.

4/14/2023

Multiverse Computing

Dear Hiring Manager,

I am excited to submit my application for the **Machine Learning Engineer Internship** position at **Multiverse Computing**. With a Master of Engineering in Mechanical and Industrial Engineering with a technical emphasis on machine learning and data analytics from the University of Toronto, I am confident that my experience, passion, and skill set make me an ideal candidate for this role.

During my time at the Centre for Maintenance Optimization and Reliability Engineering, I successfully completed data analysis initiatives, from collecting and preprocessing data to developing effective solution methods and presenting data-driven insights to my team. As a Data Analyst Intern at Chuang Chuang Culture Communication, I analyzed customer data, collaborated with cross-functional teams, and delivered valuable insights that drove business growth.

My background in various positions within multiple organizations has equipped me with the ability to balance competing tasks, adapt to shifting priorities, and proactively address emergent issues. My strong communication and relationship-building skills enable me to integrate seamlessly with different teams, making me an asset to any organization.

As a **Machine Learning Engineer Internship**, I can bring a range of strengths to your team, including:

- Proven track record of supporting solution model development, collecting data for analysis, presenting data-driven insights to technical teams, identifying trends and patterns in complex data sets, and translating raw data into viable business representations.
- Experience with extracting, transforming, and analyzing data from multiple data sources ensuring data quality and integrity is maintained from source to the final output.
- Solid history of applying new developments in machine learning and statistics and extensive experience using machine learning techniques.
- Effectively communicate analytical findings to both technical and non-technical audiences.
- A deep understanding of various data analysis methodologies and tools, including Python, SQL, R, Excel, PowerPoint, Power BI, and Microsoft Azure.

I would appreciate the opportunity to schedule an informational interview to discuss further how my background aligns with your needs. With my drive, commitment, education, and proven track record of achievement, I am confident that I can make an immediate and significant contribution to **Multiverse Computing** as the **Machine Learning Engineer Internship** on your team.

Thank you for considering my application.

Sincerely,
Xiangzi (Ivory) Chen