

# LINYI (LINCOLN) GUO

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## SUMMARY

- Over 3 years of experience in data cleaning, data visualization, data analysis, statistical modelling and machine learning
- Outstanding analytical skills with ability to tell the story behind data clearly and succinctly
- Demonstrated record of facilitating analysis/predictions and performing ad-hoc analysis with statistical methods
- Proficient in statistical programming languages/tools such as Python, SQL, SAS, R, Power BI and Tableau
- Excellent team player and self-starter with great communication and presentation skills
- A motivated M.Sc. in Statistics (9.8/10.0) with a passionate interest in data science and machine learning

## PROFESSIONAL EXPERIENCE

### Manager, Quantitative Analytics, The Bank of Nova Scotia

November 2021 – Current

- Calculate and monitor CCR metrics, and provide CCR regulatory capital each quarter
- Develop and enhance code for new features required by stakeholders, OSFI and Basel
- Analyse and investigate data issues from 10+ sources with **Python** and **SQL**
- Automate repeated work with **Python** and **Bash**, and develop BI with **Power BI**
- Responsible for operational reports and daily communications with stakeholders

### Statistical Programmer, Everest Clinical Research Company

May 2021 – October 2021

- Performed clinical trial database quality/integrity checks by generating **SAS** data TLGs for data reviewing and cleaning
- Developed **SAS** programs and generated complete, accurate and validated statistical TLGs in well-defined formats
- Programed and performed quality control of SDTM and ADaM datasets according to the dataset specifications

### Research & Teaching Assistant, University of Ottawa - Ottawa, ON

September 2018 – October 2020

- Brought down the prediction error (MSE) by 25% on average for the US unemployment dataset by applying hidden Markov models (aka state space models) and Bayesian analysis
- Constructed HMMs to break down retail sales datasets, and achieved better visualization results using **R** and **Python**
- Customized HMMs under specific parameters and adopted parallel computation to accelerate the training
- Delivered tutorial courses and graded assignments and test paper in Math and Stat for over 700 undergraduates
- Assisted undergraduates in dealing with learning problems, and provided regular, accurate and timely feedback

### Data Analyst, China Life Insurance Company - Henan, China

July 2016 – September 2016

- Maintained the local branch's database with **SQL** daily, including updating, inserting and removing data
- Collected, input and analyzed clients' data from salesmen, marketing channels and other sources
- Utilized **Excel** to compute statistical data and draw diagrams to provide actionable insights upon clients' data
- Compiled visualised analysis reports and presented the results for decision making

## PROJECTS

### Hand-written Digit Recognition and Overview of Graph Neural Network

- Built a perceptron (1-layer NN) from scratch using **Python** and achieved 91% accuracy
- Utilized library **keras** to build a 2-layer NN and elevated the accuracy to 98% from 91%
- Self-studied the GNN, and wrote an overview to introduce GNN and how it works

### CANDEV Data Challenge: Government Funding Analytics

- Preprocessed data using **SQL** and did variable selection using frequency table and factor analysis
- Utilized basic charts and a dynamic bubble chart on geographical maps to illustrate the funding trend and distribution
- Published the whole project as an interactive web-based application through **R Shiny** Server

### Mobile Phone Customer Behavior's Analysis and Prediction

- Drew frequency table, bar chart, fan chart and computed descriptive statistics to explore data with **R**, **SQL** and **Excel**
- Utilized techniques in survival analysis such as cox regression to analyze and select variables
- Adopted cox regression to do survival analysis and variable selection, trained a logistic models and decision trees
- Tested the performance and made ad-hoc analysis, achieved 87% prediction accuracy on average in the end

## EDUCATION

### M.Sc. in Statistics, University of Ottawa – Ottawa, Canada

September 2018 – October 2020

GPA: 9.8/10.0

### B.Sc. in Mathematics, Zhengzhou University – Zhengzhou, China

September 2014 – June 2018

GPA: 3.7/4.0

## PROGRAMMING & CERTIFICATES

**Programming:** Python, SQL, Linux, Git, bash, SAS, R, Microsoft Office, Markdown, LaTeX, MATLAB

**Certificates:** AWS Certified Cloud Practitioner (AWS), IBM Data Science Professional Certificate (IBM), Deep Learning (Deeplearning.ai), SAS 9.4 Advanced & Based Programming (SAS), FRM PART I (GARP)