

Haoting (Alexa) Yu

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EDUCATION

University of British Columbia

BSc, Major in Mathematics

Vancouver, Canada

Sep 2017 - May 2022

Academic Accolades: Dean's honor list (2020); Dean's list (2018)

Core courses: Calculus I-IV, Linear Algebra, Linear Programming, Partial differential equations, Probability, Stochastic Process

University of Edinburgh

MSc, Major in Operational Research with Data Science

Edinburgh, UK

Sep 2022 - Nov 2024

Core courses: Fundamental of Operational Research, Fundamental of Optimization, Operational Research, Applied Machine Learning, Reinforcement Learning, Biomedical Data Science

WORK EXPERIENCE

Fugro

Laboratory Quality Engineer

Wallingford, UK

Aug 2024 - Present

- **Calibrate transducers** and **manage the Microsoft Access database**, maintaining calibration records, test results, and equipment performance data to ensure measurement accuracy and streamlined lab operations
- **Developed a full Python script** to automate and replicate the lab's data processing **Microsoft spreadsheet in Origin**, improving efficiency, accuracy, and reproducibility of geotechnical data analysis
- Initiated an **inter-lab comparison project** using **R**, establishing a framework to evaluate and benchmark **international lab performance**, enhancing quality control and consistency across different locations
- **Developed a baseline machine learning model in Python** for **soil particle and grain detection**, utilizing **YOLO v9** for **image processing and object classification**, enhancing automation in sediment analysis

HD Education

Mathematics Science Instructor

Remote

May 2022 - Oct 2024

- Provided **one-on-one and group tutoring** sessions to undergraduate students, reinforcing concepts in subjects such as **calculus, algebra, and statistics**
- Developed tailored learning strategies to help students understand **complex mathematical theories** and problem-solving techniques.
- Assisted students in preparing for exams and improving their academic performance by offering clear explanations, practice problems, and constructive feedback.

UBC Faculty of Science

Math Department Teaching Assistant

Vancouver, Canada

Sep 2021 - May 2022

- Prepared **course contents and weekly lab assignments**
- Assisted students individually or in small groups with their assignments and related questions in facility workshop (teaching duty)

UBC Faculty of Graduate and Postdoctoral Studies

Doctoral Examinations Student Assistant

Vancouver, Canada

Sep 2021 - May 2022

- Provided **daily administrative duties** and support to the faculty, utilizing Microsoft Excel for **data management** and sorting examination-related information
- Collected, analyzed, and ensured data accuracy using **Microsoft Excel** for tracking and organizing data related to the doctoral examination process

Ipsos Strategy3

Consultant Intern

Beijing, China

May 2021 - Aug 2021

- Conducted **desktop research and cold calls** to gather data on the **radiotherapy market** in China, employing **Microsoft Excel for data analysis**
- Participated in **in-depth interviews with industry experts**, creating and updating the database using **SQL** for efficient data management and retrieval
- Collaborated with consultants to complete a project report for Varian, using **Power BI and Microsoft PowerPoint** to present market research insights and recommendations

Britbots Fund

Investment Analyst Intern

London, UK (remote)

Aug 2020 - Sep 2020

- Conducted research on the **Chinese industrial robotics industry**, performing **DCF analysis, SWOT analysis, and P/S analysis** on ZOA Robotics using **Microsoft Excel and PowerPoint**
- Researched various **funding resources** and utilized **Power BI** to create dashboards that highlighted the best investment opportunities for ZOA Robotics

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- Produced analytical reports with **Tableau visualizations** and used data modelling techniques in **Python (Scikit-learn)** to predict future **market segmentation trends**

PROJECT EXPERIENCE

Personalized Poem Generation with Fine-Tuned Large Language Model

Jan 2025 – present

- **Fine-tuned 7B LLM instruct model on 100 self-written poems** using **LoRA fine-tuning method** to generate poetry that replicates my **style, tone, and imagery**, with title-based input for seamless poem generation
- **Lightweight and efficient**, deployable on **Apple Silicon (MLX framework)**, **CPU (GGUF for Ollama, LM Studio)**, and **cloud (Docker/AWS)** for broad accessibility

Anomaly Detection and Forecasting in Power Systems with Renewable Energy

June 2023 – Sep 2023

- Engineered an **anomaly detection and forecasting model** for power systems using **machine learning techniques, including CNN-LSTM**, achieving **90%+ accuracy** in anomaly detection and **predictions within 5% deviation**, improving power grid resilience amidst **renewable energy integration**

Development Plan of Electric Vehicle Charging Stations for the City of Dundee

Oct 2022 – Nov 2022

- Designed a **linear programming model** using **Xpress and Python** to optimize the **placement and scheduling** of electric vehicle charging stations in **Dundee**, factoring in demand and potential charging locations

Sentiment Classification on Movie Reviews

Oct 2022 – Dec 2022

- Developed a **sentiment classification model** for movie reviews using **NLP techniques** such as BERT, Bag of Words, and TF-IDF. Implemented **logistic regression, SVM, and neural networks**, optimizing model performance for a dataset of over **10,000 reviews**

SKILLS

Language: Mandarin (native speaker), English(fluent)

Computer Skills: Python (NumPy, SciPy, Pandas, Seaborn, Scikit learn), SQL, Power BI, Tableau, R, MATLAB, JavaScript, Origin

Other Skills: Textile Design, Content Creation, Writing, Photographing

Website

Art e-portfolio: <https://alexv1204.wixsite.com/website-1> ; <https://alexv1204.wixsite.com/website>

Project portfolio: