

JUNXING (J.C.) CHEN

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[Portfolio Website](#) | [GitHub](#) | [LinkedIn](#)

SKILLS

- **Programming Languages:** Python, MATLAB, SQL, R, Docker, Git, Django, Flask, Kubernetes, JavaScript, etc.
- **Machine Learning:** TensorFlow, PyTorch, Scikit-Learning, XGBoost, Hugging Face, Watson, Computer Vision, Large-Language-Models (LLMs), Generative Models, Text-Audio Models, Transformers, Data Visualization, etc.
- **Mathematics:** Statistical Modeling, Bayes' Theorem, FDM, Linear Algebra, MCMC, etc.
- **General:** Teamwork, Research, Problem Solving, Scientific Writing, Presentation, etc.

EDUCATION

Doctor of Philosophy

University of Toronto

Toronto, Canada | August 2018 - November 2023

- Authored six papers (three as first author) in esteemed scientific journals and presented findings at leading science conferences such as AGU and Goldschmidt.
- Recipient of the Naldrett A.J. Scholarship and the Nowlan Explorers' Scholarship.
- Developed thermodynamic software [DIFFUSUP](#), published in [Applied Computing and Geosciences](#). DIFFUSUP focuses on using the finite-difference method (FDM, Crank-Nicolson) for diffusion modeling, assisting hundreds of students and scientists, and [cited](#) in numerous papers.
- Applied mathematical, physical, and computational techniques to model Venus and Earth tectonics and environments. Contributed to the reconstruction of the evolutionary history of slabs in subduction zones, resulting in publications in [Nature Communications](#).
- Developed and applied diffusion and phase-change modeling techniques to analyze geochemical processes in metamorphic rocks, combined with statistical methods like Markov chain Monte Carlo (MCMC), resulting in publications in the [Journal of Petrology](#).
- Instructed over 500 graduate and undergraduate students across various environmental, Earth science, and numerical modeling courses.

Bachelor of Science

University of Science and Technology of China

Hefei, China | August 2014 - June 2018

- Awarded outstanding student scholarship (Top 5% student award).
- Analyzed geochemical isotopic data analysis by (MC-)ICP-MS measurement for the origin of rock and biological samples.

EXPERIENCE

Data Scientist | IBM | Contract Full-time

Markham, Canada | September 2022 - June 2023

- Developed tens of machine learning projects using frameworks such as TensorFlow, PyTorch, and platforms including Hugging Face and IBM Watson.
- Led the fine-tuning and deployment of Large-Language-Models (LLMs)(e.g. Llama, Mistral, GPT-4) for innovative AI assistant applications.
- Utilized computer vision models (e.g., Mask R-CNN, YOLO, Detectron2) for tasks such as real-time object detection and image segmentation, and leveraged generative models like GANs and diffusion models to explore applications in image content creation.
- Designed and implemented a fraud detection and customer behavior prediction model using banking data, focusing on lightweight, easy-to-use, and computationally efficient algorithms to provide actionable insights for the financial sector.
- Deployed text-to-audio models enabling the conversion of text into natural-sounding speech and vice versa, and further for custom voice cloning model, providing a seamless user experience for voice-based applications.
- Managed a multidisciplinary team of 10 professionals and produced top-rated (4.7 stars) data science instructional content, comprising meticulously crafted Jupyter notebooks and articles for the Skills Network.

Research Fellow | University of New Mexico | Visiting Scholar

Albuquerque, USA | June 2017 - September 2017

- Processed Brillouin laser experiments data, published in [Scientific Reports](#).

Data Analyst | CNPC Logging, Southwest | Contract Full-time

Chongqing, China | June 2016 - September 2016

- Applied advanced data analysis techniques to interpret and visualize complex electrode resistivity and gamma-ray logging data, contributing to the success of multi-million-dollar natural gas projects.