Junxing (J.C.) Chen

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Portfolio Website | GitHub | LinkedIn

Experience

Data Scientist | IBM 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, designing applications for business use.
- 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.

Software Developer | University of Toronto Toronto, Canada | August 2018 - November 2023

- Developed DIFFUSUP (website, paper), an innovative thermodynamic modeling software, assisting hundreds of students and scientists and cited in numerous papers.

Research Fellow | University of New Mexico Albuquerque, USA | June 2017 - September 2017

- Processed Brillouin laser experiments data, published in Scientific Reports.

Data Analyst | CNPC Logging, Southwest Chongqing, China | June 2016 - September 2017

- 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.

Education

Doctor of Philosophy | Earth and Planetary Science
University of Toronto Toronto, Canada | August 2018 - November 2023

- Authored five papers (three as first author) in esteemed scientific journals and presented findings at leading science conferences such as AGU and the Goldschmidt.
- Recipient of the Naldrett A.J. Scholarship and the Nowlan Explorers' Scholarship.
- Applied mathematical physics computational techniques and Earth and Planetary science expertise 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 from a thermodynamic perspective, 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 | Earth and Planetary 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.

Skills

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