

# Junxing (J.C.) Chen, Ph.D.

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## SKILLS

**General:** Teamwork, Research, Problem solving, Presentation, etc.

**Programing Languages:** Python, MATLAB, R, SQL, Javascript, Docker, HTML, CSS, etc.

**Machine learning:** Discriminative-Generative/(Un-)Supervised Models Algorithms, Deployment, Transformers, Visualization etc.

**Mathematics & Statistics:** Bayes' theorem, Finite Difference Methods (FDMs), Markov chain Monte Carlo (MCMC) etc.

## EXPERIENCE

### Doctoral Researcher & Software Developer

*University of Toronto, Canada | August 2018 - November 2023*

- Developed DIFFUSUP ([website link](#), [paper link](#)), a thermodynamic modeling software [cited](#) in academic papers and featuring a user-friendly Graphic-User-Interface (GUI) utilizing FDMs like Crank-Nicolson method for solving Partial Differential Equations (PDEs).
- Published research work in top scientific journals, including prestigious one [in Nature Communications](#), and presented findings at top-tier science conferences such as AGU.
- Applied computational skills and Earth & planetary knowledge to physically model Venus and Earth tectonic evolution.
- Conducted geochemical data analysis and utilized MCMC method for model calibration, resulting in [publications](#) in the Journal of Petrology.
- Educated 500+ graduate and undergraduate students in various environmental, earth science, and numerical modeling courses.

### Data Scientist Intern

*IBM, Canada | September 2022 - June 2023*

- Led development of 100+ machine learning projects, enhancing model efficiency using TensorFlow, PyTorch, and platforms like Hugging Face and IBM Watson.
- Orchestrated the creation of AI-embedded application, integrated into the IBM Watson ecosystem, including deployment of Large-Language-Model (LLM) APIs (e.g. Llama 2, GPT-4) and development of a web application for an AI assistant.
- Utilized Watson NLP to analyze sentiment from various sources, including product reviews, Twitter comments, and user audio recordings.
- Managed a 10-person team and produced top-rated (4.7 stars) data science content for the Skills Network, reaching over 7 million individual users and 150+ companies worldwide.

### Data Analyst Intern

*University of New Mexico, USA | June 2017 - September 2017*

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

### Data Analyst Intern

*China National Petroleum Corporation Logging Company, Southwest, China | June 2016 - September 2016*

- Analyzed and visualized electrode resistivity and Gamma-ray logging data for several multi-million natural gas projects.

## EDUCATION

### Doctor of Philosophy

*University of Toronto, Canada | Earth and Planetary Science | August 2018 - September 2023*

- Awarded Naldrett. A.J scholarship, Nowlan explorers' scholarship, Bedell explorers scholarship, etc.

### Bachelor of Science

*University of Science and Technology of China, China | Earth and Planetary Science | August 2014 - June 2018*

- Awarded outstanding student scholarship (Top 5% student award)

## VOLUNTEER & ACTIVITIES

- Data science community contributor, constructed 10+ related free Medium articles.
- Active Level 6 soccer match official in Canada soccer association, judging for ~50 games per year.