

Yao Jiang

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SKILLS

Programming Languages: Python, Fortran, SQL, C, Java, Matlab, Bash

Tools: AWS, GCP, Jupyter Notebook, Scikit-learn, Tensorflow, Keras, Git, Latex, Spark, Flask, MPI, Stata

Other: Machine Learning, Deep Learning, NLP, Statistics, Optimization, Computing Cluster, Job Scheduler

EXPERIENCE

Data Science Fellow, Insight, Toronto

May 2020 - Present

- Built a web application for movie production companies predicting the popularity of their posts on social media platforms and suggested strategies for more successful posts, leading to an improved marketing campaign.
- Utilized *Tensorflow* and *Keras* to build a multi-input (image & text) deep learning regression model based on pre-trained word embedding model (*GloVe*) and CNN model (*VGG16*) and predicted feedback (number of likes, shares, etc.) on social media platforms.
- Reduced the mean square error by 63% and increased R^2 by 0.56 compared to baseline models.

Graduate Student Researcher, McGill University, Montreal

Sep. 2015- Present

- Conducted aerodynamic shape optimization by numerical solving of partial differential equations and physical modeling of turbulence.
- Performed large scale data management using parallel computing on clusters (up to 400 CPU cores).
- Optimized computational grids and numerical model, reducing the data storage by 60%.
- Served as teaching assistant for four courses involving 200 students.

Research Assistant, McGill University, Montreal

Apr. 2020- Sep. 2020

- Collected user-level and review-level SQL data from foreign restaurant review platforms and conducted machine translation using GCP APIs.
- Performed feature extraction, topic modeling and regression on large datasets (~TB) using *PySpark*.
- Provide implication on relation between review characteristics and review helpfulness votes, leading to an improved design of online platform evaluation system.

Research Engineer, Electricite de France, Paris

Apr. 2014- Sep. 2014

- Conducted detailed 3D transient numerical simulation and visualization of liquid particles to forecast the formation of radiation fog.
- Contributed to the atmospheric library of the open-source CFD solver *Code_Saturne* using *Python*.
- Precisely captured the formation and dissipation of radiation fog with 90% accuracy compared to experimental data.

PROJECTS

NLP Project Leader, McGill University, Montreal

July 2019 - Dec 2019

- Deployed an intelligent web-server achieving state-of-the-art performance in question-answering tasks and complex articles understanding.
- Fine-tuned *BERT* language model using *Python*, *NLTK* and *huggingface* and implement a two-stage transfer learning pipeline.
- Trained the model to recover the favorable properties including paraphrasing, co-reference resolution, etc. and validated the linguistic and conversational properties through empirical experiments.

EDUCATION

Ph.D. in Mechanical Engineering, McGill University, Montreal, Canada

2020

M.S. in Numerical Simulation, Supaero, Toulouse, France

2014

B.Eng. in Mechanics, Beihang University, Beijing China

2011