

# WEIHAN LUO

Math + CS + Stats

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<https://weihan1.github.io>

## SKILLS

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### Languages:

Python, SQL, R, LaTeX, Java, C/C++

### Technologies:

VS Code, PyTorch, TensorFlow, Spark, SAS, Bash, Unix, Git, Keras, NumPy, Pandas, Teradata

## EXPERIENCE

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### DGP Lab, University of Toronto

August 2023 - Present

*Computer Vision Researcher, Host: David Lindell Technologies: Pytorch-Lightning, NerfAcc, Neuralangelo, Instant-NGP*

- Adapted state-of-the-art Implicit Surface Reconstruction techniques for Multiview Transient NeRFs.
- Introduced multiple regularization techniques to improve the quality of the 3D reconstruction.
- Surpassed the previous baseline in all metrics.
- Currently in submission.

### Royal Bank of Canada

May 2023 - September 2023

*Data Scientist*

*Technologies: Python, LightGBM*

- Developed a benchmark for future data analysis on a newly acquired Ontario housing valuation dataset.
- Conducted experiments on training on LightGBM with Optuna tuning to predict Canadian housing prices.
- Surpassed the baseline model by achieving a 2% increase in precision and 1% decrease in MAPE.
- Identified a method that triples the speed of data analysis.

### Royal Bank of Canada

May 2022 - April 2023

*Data Analyst*

*Technologies used: SAS, Pandas, Teradata*

- Extracted and analyzed large-scale credit card data using SQL queries in SAS.
- Developed comprehensive visualizations and reports on client attrition for the RBC travel credit cards.
- Discovered a pre-pandemic/post-pandemic trend that affects ~ 8 million credit card holders.

## PUBLICATION

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### Model Compression

August 2022 - March 2023

*Computer Vision Research*

*Technologies: OpenCV, Pytorch, Git, Paperspace, Scipy*

- Samir Khaki and **Weihan Luo**, "CFDP: Common Frequency Domain Pruning", CVPR 2023. Undergraduate students only.

## PROJECTS

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### Adversarial Attack on AI Text Detectors

April 2023-Present

*Deep Learning Project — <https://github.com/weihan1/Attack>*

*Technologies: OpenAI API, HuggingFace*

- Created an adversarial framework to defeat AI-written essay detectors like GPTZero with above 90% accuracy.

### Forecasting Chess Elo On A Time Series

December 2021

*Data Science Project — <https://towardsdatascience.com/forecasting-chess-elo-on-a-time-series-7e448a2d161e>*

- Devised a custom model to predict chess ratings based on past games.

## EDUCATION

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### University of Toronto

2019-June 2024

Honours Bachelor of Science with PEY Co-op

Relevant courses: Advanced Calculus, Software Design, Deep Learning, Data Structures and Algorithms, Probabilistic Learning.

## EXTRACURRICULAR AWARDS

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2015 Chess National Runner-up. Top 96th percentile rated player on Lichess.

<https://lichess.org/@/bibimbap123/perf/bullet>