# WEIHAN LUO
## Math + CS + Stats

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https://weihan1.github.io

## SKILLS

**Languages:**
Python, SQL, R, LaTeX, Java, C/C++

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

## EXPERIENCE

**DGP Lab, University of Toronto**                                    August 2023 - Present
*Computer Vision Researcher, Host: David Lindell*    *Technologies: Pytorch, NerfAcc, Neuralangelo*

- Adapted state-of-the-art Implicit Surface Reconstruction techniques for Multiview Transient NeRFs.
- Introduced a new regularization prior that helps the radiance field learn a proper Signed Distance Function.
- Surpassed the SOTA method by achieving a 7% increase in PSNR.
- Planned for ECCV2024 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 $\sim 8$ million credit card holders.

## PUBLICATION

**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

**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

**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

2015 Chess National Runner-up. Top 96th percentile rated player on Lichess.
https://lichess.org/@/bibimbap123/perf/bullet