

Bilal Khan

bkkaggle.github.io
bkkaggle.github.io/blog

bilal.khan1@uwaterloo.ca
github.com/bkkaggle

ABOUT

- **Interests:** Full-stack and mobile development, NLP, Generative modeling, Systems programming
- **Languages:** Python, Javascript, Rust, C/C++, SQL, Swift
- **Libraries and Frameworks:** ReactJS/React Native, Express.js, Pytorch, Tensorflow, JAX, GCP

EXPERIENCE

Manageering Inc

Sep 2019—May 2020

Full-stack and mobile developer

- Worked on developing an app to help students preparing for the SAT by creating personalized plans based on student results on diagnostic tests.
- Built with **React Native**, **Express.js**, **MySQL**, and the **Google Cloud Platform**.

PROJECTS

Replicating machine learning papers

July—Dec 2020

Image-to-image translation GANs

github.com/bkkaggle/jax-gans

- Replicating the ACL-GAN paper in **JAX** and the Pix2Pix and Pix2PixHD papers in **Pytorch** and **Tensorflow**.

L2

May—June 2020

Fast, BLAS-accelerated machine learning library

github.com/bkkaggle/L2

- Wrote a fast and efficient machine learning library in the Rust programming language.
- Supports numpy-style multidimensional arrays and array operations, **BLAS-accelerated** matrix multiplication, and a **graph-based automatic differentiation engine**.

NLP Research Project

March—May 2020

Replicating GPT-2

github.com/bkkaggle/lm-training-research-project

- Pretrained OpenAI's 124M parameter GPT-2 language model to generate convincing human-like text.
- Used the Google Cloud Platform with **PyTorch** and **Tensorflow** to scale the model to a 128-core TPU Pod.
- Developed and pretrained a new, more efficient ALBERT-style language model that uses **4x less memory** and trains **2x faster** than GPT-2 with only a 10 ppl drop in performance.

Machine learning competitions

Jan 2018—July 2019

Kaggle Expert

Highest competition rank: 798/140,000+

- *Silver Medal:* (41/3611) Google Analytics Customer Revenue Prediction Competition
- *Bronze Medal:* (54/648) CERN TrackML Particle Tracking Challenge
- *Bronze Medal:* (173/3229) TGS Salt Identification Challenge
- *Bronze Medal:* (287/3634) 2018 Data Science Bowl
- *Bronze Medal:* (314/3165) Jigsaw Unintended Bias in Toxicity Classification

EDUCATION

University of Waterloo

2020-2025 (Expected)

Bachelor of Software Engineering (BSE) Candidate

Coursera

Nov 2017—Feb 2018

Deep Learning Specialization

coursera.org/verify/specialization/8YRK7HDMW5XZ