Bilal Khan

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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, Node.js/Express.js, PyTorch, Tensorflow, JAX, GCP

EXPERIENCE

Manageering Inc — Full-stack and mobile developer   Sep 2019—May 2020
- 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 — Image-to-image translation GANs   July—Dec 2020
- Replicating the ACL-GAN paper in JAX and the Pix2Pix and Pix2PixHD papers in PyTorch and Tensorflow.

Machine learning library — Written in the Rust programming language   May—June 2020
- Supports numpy-style multidimensional arrays and array operations, fast BLAS-accelerated matrix multiplication, and an efficient graph-based automatic differentiation engine.

NLP research Project — Replicating GPT-2   March—May 2020
- 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 flight rules — A guide of useful tips and tricks for machine learning   Sep 2019

PyTorch Zoo — PyTorch utility library   June 2019
- Created a Python-based library with a collection of useful modules and utilities for working with PyTorch with 80+ stars on Github.

Computer vision research project — Handwritten mathematical expression recognition   Feb—May 2019
- Worked on implementing several machine learning papers in the field (WAP, Im2Latex) to transcribe handwritten math equations into LaTeX.

Machine learning competitions — Highest Kaggle rank: 798/150,000+   Jan 2018—July 2019
- *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 — Bachelor of Software Engineering (BSE) Candidate   2020—2025 (Expected)

Coursera — Deep learning specialization   Nov 2017—Feb 2018