Muhammad Gill

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EDUCATION

- **University of Waterloo** — Waterloo, ON
  Computer Engineering (Bachelors) — *Class of 2016*

EXPERIENCE

- **Doordash** — Mountain View, California, USA
  Software Developer — *2021 - Present*
  - Designed and wrote logic for a large photo-processing distributed system which currently processes, stores, caches, and serves thousands of merchant photos per second.
  - Designed and built AI software to incorporate metrics into extremely large production services. This AI system wrote over 25,000 lines of code that are currently being used in customer-facing production services serving over 20 million users.

- **Google** — Mountain View, California, USA
  Software Engineer — *2019 - 2020*
  - Wrote a parallel data processing pipeline (c++) to generate text datasets to be used for training almost any Ontology classification model.
  - Optimized SQL queries to run on Google's parallel query engine, reducing runtime by 80%.
  - Modified a BERT transformer architecture (python, tensorflow) to be used with an MLP in order to classify text post-encoding, increasing base classification accuracy by over 6%.
  - Achieved state-of-the-art precision classifying wikipedia text, using a modified transformer model.
  - Pretrained a BERT encoder (tensorflow) on large volumes of english text using cutting edge parallel TPU technology and kubernetes to achieve over 95% accuracy on dataset sequences.
  - Authored a research paper (publication): Text Object Ontology, in which I present state of the art results in Ontological Text Classification.
  - Wrote, and deployed (using kubernetes) a parallel label propagation algorithm (c++) to label unlabelled data samples, increasing algorithm runtime speed by 1800%, over single machine speed.
  - Independently designed and implemented semi-supervised learning pipeline (tensorflow, cpp) for large security datasets. Initial, unoptimized models realized accuracy and F1 scores above 98%.
  - Wrote custom evaluation binary (python, cpp, javascript) to score the semi-supervised and unsupervised models, saving 100s of manual hours.
  - Wrote a custom node transformation binary (c++, python) to generate new datasets capable of key-shifting to create 30+ unique label datasets.

- **Blackberry LTD** — Waterloo, Ontario, Canada
  Software Developer — *2018*
  - Developed deep learning model for relational database syntax conversion from PL/SQL (oracle) to mySQL (100% precision).
  - Developed and optimized dynamic scripts (Java) to efficiently and securely migrate over 20% of company databases (schema, procedures and data) between different, incompatible platforms.
  - Contributed greatly to many other confidential projects (java, javascript, HTML).

- **Nielsen Inc** Markham, Ontario, Canada
  Software Engineer *2017*
  - Wrote data service to process thousands of consumer purchase receipts using open source OCR libraries (saved company thousands of manual hours).
  - Customized, optimized an open source mySQL DB (mariaDB) to increase insert speed by 12%.
- **Personal Projects**
  Software Developer *2012 - 2017*
  - Wrote a model (python) to accurately predict stock price volatility using financial derivative (options) flow having over 82% 3-day accuracy.
  - Independently developed (c++) 3200+ elo chess engine (neural network). Trained using a self generated dataset (90+ million unique chess positions).

SKILLS

- **Operating Systems**: Linux (Debian/Ubuntu), macOS, Windows
- **Languages**: C++, Python, Java, SQL, Bash, Javascript, CSS, HTML
- **Technologies**: Tensorflow, scikit learn, Pytorch, kubernetes, .NET, Node.js, MATLAB, Express.js
- **Tools**: Git, XCode, Visual Studio, Eclipse, VS Code, Azure, mySQL, mariaDB, MongoDB, AWS, NoSQL