JUSTIN BORROMEO

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Technologies Used

Programming Languages: C/C++, Java, Go, Python, TypeScript, R, C#, VHDL, MATLAB, SQL
Frameworks & Tools: PyTorch, TensorFlow, Keras, BigQuery, pandas, git

Work Experience

Google, *Software Engineering Intern [SQL Pipelines]*   May 2020 – Sept 2020
- Worked on a unified system for monitoring and debugging the various pipeline technologies at Google
- Architected and implemented pipeline data ingestion, and built out frontend components

Google, *Software Engineering Intern [Anti-Malvertising]*   Sept – Dec 2019
- Developed and deployed a data pipeline and gRPC service to fingerprint webpage technologies and proactively detect security vulnerabilities in ads' landing pages
- Implemented aggregation functions to evaluate click impact of blacklisting advertiser IPs

Imply, *Database and Distributed Systems Engineering Intern*   Jan – Apr 2019
- Contributed ~20 features and patches to the open-source Apache Druid database, including time-based ordering for streaming SELECT queries, Kinesis de-aggregation, and ingestion monitoring

Toast, *Software Engineering Intern [Payments Core]*   May – Aug 2018
- Worked on infrastructure and services for credit card payment processing
- Developed tooling for identifying data synchronization issues

Lytx, *Software Engineering Intern*   Jan – Apr, Aug – Dec 2017
- Implemented JWT auth for Lytx Video Services' web application and RESTful API
- Designed a geohash indexing system and developed a proof-of-concept web application that supports sub-second geospatial queries on terabytes of GPS data

Research and Volunteer Work

Waterloo Configurable Architectures Group *[Prof. Nachiket Kapre]*   Sept 2020 - Present
- Currently investigating algorithms for FPGA floor planning of systolic arrays for accelerating ML inference

UWaterloo Data Systems Group *[Prof. Jimmy Lin]*   Sept 2020 - Present
- Currently researching neural rankers for information retrieval

UWaterloo, *Undergraduate Research Assistant [Prof. S.M. Zahedi]*   Jan - Apr 2020
- Investigated using reinforcement learning and autoencoder neural networks to tune resource allocation for collocated datacenter workloads using hardware-level metrics

UW Blueprint, *VP Projects and VP Talent*   Sept 2019 – Apr 2020
- Led a team of 32 developers in building technological solutions for Waterloo-area non-profits

Education

UWaterloo, *B.A.Sc in Mechatronics Engineering w/ Option in AI, Class of 2021*   cGPA: 86%
- Recipient of the Arthur F. Church Engineering Entrance Scholarship, UW President's Scholarship, Professional Engineers Ontario Scholarship