Kuba Karpierz

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Experience

Sabbatical | Boston, MA / Ithaca, NY
Independent Developer | Rust, TypeScript, C#, WGSL, HLSL | October 2021 - Present

- [Black Hole](#) - A real-time GPU-accelerated path-tracer written in Rust and deployed to the web.
- [Passwordle](#) - A multiplayer Wordle-variant coded in TypeScript with matchmaking support.
- [AutoChess](#) - A chess engine capable of evaluating 16x16 boards at 200k positions per second.
- [Low Poly Earth](#) - Generated and rendered a low-poly 3D mesh of the Earth from bathymetric images.

Google | Mountain View, CA
SOFTWARE ENGINEER | C++, Python, Go | July 2019 - October 2021

- Trained, evaluated and launched natural language models which serve 0.3% of production traffic.
- Designed and implemented infrastructure for serving multiple models simultaneously in production, allowing our team to reliably A/B test and roll out new models worldwide.
- Designed and implemented an extensible, interactive dashboard for capturing production failures and measuring quality of experimental models.

Sift | San Francisco, CA
MACHINE LEARNING ENGINEER | Java, Python | September 2017 - May 2019

- Designed infrastructure for live processing, scoring, and storing of millions of images per month, allowing for rapid iteration on new image models in production.
- Implemented and evaluated a variety of NLP techniques including: simulating an online Kneser-Ney model, fine-tuning BERT, and utilising word embedding to implement similar text detection.
- Implemented a PySpark pipeline to compute ROC-AUC variance for informed decision making around experimental modelling changes.
- Created and backfilled a HBase datastore capable of real-time read-write access across terabytes of data.

University of British Columbia | Vancouver, Canada
GRADUATE RESEARCHER - COMPUTER SCIENCE | C, C++, Go, MATLAB | May 2015 - August 2017

- Implemented a prototype distributed assertion library in Go with support for distributed predicates to dynamically verify properties of distributed systems.
- Designed and prototyped a SAT-based program difference checker to improve unit test sensitivity.
- Empirically and theoretically demonstrated that a class of planar partitioning techniques in 2D would fail to converge to a representative sample of the underlying mass distribution.

Facebook, Orbis Mutual Funds, Plenty of Fish | Canada/USA
SOFTWARE ENGINEERING INTERN | Objective-C, C# | Summer 2012, 2013, 2014

Education

The University of British Columbia | Vancouver, Canada
M.S in Computer Science, Withdrawn in Good Standing	September 2015 - August 2017
B.S in Computer Science and Mathematics	September 2010 - May 2015