Alex Trostanovsky

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EDUCATION

Master of Science in Computer Science (MSc) 2020 - 2023
Computer Science, University of British Columbia, Vancouver, BC

Bachelor of Computer Science Honours 2015 - 2020
School of Computer Science, Carleton University, Ottawa, ON
CGPA 11.88/12.0 (A+)

TECHNICAL SKILLS

Languages & Frameworks: Python, C++, Scala, Spark, Akka, Pandas

RESEARCH

Graduate Research Assistant September 2020 - Current
Systopia, Vancouver, British Columbia, Canada

- Evaluated the combined effect of vertex *and* edge ordering techniques on large, in-memory, real-world graphs (e.g. social, hyperlink, road networks)
- Parallelized the SlashBurn vertex reordering algorithm using the Afforest algorithm for computing Connected Components and a novel, parallel sparse array reduction technique
- Implemented a scalable and lock-free vertex-*and*-edge ordering technique that leverages the compressed SlashBurn graph isomorphism and traverses the edges of the graph in parallel using the Hilbert Space Filling Curve outperforming state-of-the-art PageRank and Collaborative Filtering implementations

NSERC-Engage, Student Researcher January 2020 - July 2020
In partnership with Kinaxis and Carleton University's Computational Geometry Lab
Ottawa, Ontario, Canada

- Developed a graphical model of supply chain structures to facilitate the automatic detection of underutilized constraints in production processes
- Implemented specialized vertex contraction and graph partitioning procedures based on heuristics present in graph structures to greatly reduce dataset size and complexity and improve performance of a network-separation algorithm
- Tested runtime and correctness of community detection algorithms (Leiden, Louvain) to evaluate the feasibility of use on customer product structures

INDUSTRY

Data Scientist, Co-op January 2019 - August 2019
Ciena, Kanata, Ontario, Canada

- Developed data transformation pipelines to ingest raw customer data from both streaming and batch inputs and assembled preprocessed datasets used for training Neural Networks and Ensemble ML classifiers used in production
- Aggregated and visualized customer device anomaly occurrence data to determine the types of facilities that have been shown to experience specific anomalies, the occurrence frequency of those anomalies, and the feature distributions associated with each alarm
- Researched and cross-validated different multivariate time series classification and forecasting frameworks to inform and justify the use of inference models in production

Software Developer, Co-op May 2018 - August 2018
Apption Software, Ottawa, Ontario, Canada

- Built a server to query OpenStreetMap data stores against Canada Post databases resulting in visualizations and statistical analyses of OSM coverage of Canadian provinces

- Developed a Tableau workbook English – French translation tool producing fully localized data visualizations and dashboards used in executive overviews of top 12 clients' reports
- Implemented a detection procedure using approximate string matching techniques to extract unique move-in candidates from postal address and occupancy databases

ACHIEVEMENTS AND COMMUNITY SERVICE

- Led the 2nd placed team in the Canadian Statistical Sciences Institute National Case Study 2019 Competition
- Conducted tutorials for the Carleton Kaggle Club introducing industry-standard data-wrangling and preprocessing tools and frameworks to aspiring data scientists

AWARDS AND SCHOLARSHIPS

- Canada Graduate Scholarship - Master's Program: 2021
- Senate Medal for Outstanding Academic Achievement: 2020
- 2nd Place Winner - CANSSI National Case Study Competition 2019
  - Implemented a model that, given traffic and weather patterns, predicted a probability of delay for BC Ferries sailings
  - Presented methodology, findings, and derived feature importances to members of the BC Ferries executive team to inform scheduling decision-making
- Murdoch Maxwell MacOdrum Scholarship: 2016-2018
- Deans' Honour List: 2016-2018
- Claude Bissell Scholarship: 2017

LANGUAGES

English – Native
Hebrew – Fluent
Russian – Conversational