Martin Ondrus

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Education

Doctor of Medicine / Doctor of Philosophy Jan. 2021 – Jun. 2028
Computational Neuroscience *University of Alberta*

Thesis: Time-varying, multimodal network estimation and classification for high-dimensional neuroimaging data

Advisory Committee: Ivor Cribben, Russ Greiner, Bo Cao

Bachelor of Science / Bachelor of Commerce Sep. 2014 – Jun. 2020
Biological Science and Analytics *University of Alberta*

GPA: 3.95/4.0 (top 1% of class)

Courses: probability and statistics, machine learning, time series analysis, network science, artificial intelligence

Technical Skills

Programming: SQL (*queries, aggregating, subqueries, window functions, indexing*), Python (*pandas, numpy, matplotlib, seaborn, scikit-learn, pytorch*), R (*tidyverse, ggplot2, caret, e1071, randomForest, glmnet, parallel*), Matlab
Quantitative: Data wrangling & pre-processing, visualization, database querying, experimental design, statistical inference and hypothesis testing, algorithm design, optimization, machine learning and prediction
Other: Jupyter/Jupyter Notebook, Markdown, LaTeX, Git/Github, Distributed Computing, Unix Shell, SLURM

Work Experience

Data Engineer Intern Sep. 2021 – Mar. 2023
Northwest Auto Group *Edmonton AB, Canada*

- Created a recurrently updating dashboard for Western Canada's largest automotive dealership group to empower executives and marketing departments towards data-informed decision making in their advertising strategy
- Designed and developed a SQL, Python, and Google Cloud based data transformation and visualization pipeline for over 60,000 semi-structured data points which unified key customer information across 4 different databases
- Presented final pipeline in an understandable manner to a non-technical audience, successfully onboarded clients, and reduced process lead time by more than 50% resulting in 10+ hours saved during marketing campaigns
- Optimized back-end computations and delivered final data product at less than 10% of original budget

Data Science Intern Jan. 2020 – Apr. 2020
Volkswagen Canada *Remote*

- Led a team of 3 student data scientists in modelling 2022-2025 Canadian sales of Volkswagen's most important vehicle release in the past decade, the fully electric VW ID.4
- Built an intuitive Excel-based simulation tool and visualization interface using solver and VBA for back-end computations which optimized allocations to maximize profitability and product turnover of the launch
- Presented deliverable and forecasts to Volkswagen Canada senior leadership and advised on regional allocation of over 6,000 new and highly valuable ID.4 vehicles

Relevant Experience

Visiting Research Scientist Apr. 2023 – present
New York University *New York City, NY, United States*

- Developed statistical theory and methods for high-dimensional distributions with applications in brain mapping
- Presented findings and actively participated in discussions during weekly lab meetings, seeking feedback on my work and providing constructive input on colleagues' projects
- Organized an invited session *Frontiers in Graph Learning*, and presented work at the *Joint Statistical Meetings, 2024*, the largest statistical conference in North America

Research Scientist Jan. 2021 – present
Neuroscience and Mental Health Institute *Edmonton AB, Canada*

- Created a novel anomaly detection method called FaBiSearch, for high-dimensional time series data, which includes an `R` package implementation, and was accepted in the journal *Neurocomputing*
- Validated methodology with simulated and real neuroimaging data, used A/B testing to show improvements of 2 times in true positive rates and 10 times in false positive rates over the state-of-the-art
- Disseminated research insights at the *Organization for Human Brain Mapping 2024* conference, effectively communicating technical methodologies and results to an interdisciplinary scientific audience