Nam-Hwui (Nam) **Kim**

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Summary

- **Skills:** Experimental Design, Data Engineering, Prediction, Causal Inference, Clustering, Regression, Dimensionality Reduction.
- **Languages:** Python, SQL, R
- **Domain Knowledge:** Ads Marketing, Incrementality Measurement, Finite Mixture Models.

Education

University of Waterloo — *Waterloo, ON, Canada*

Ph.D. in Statistics — *2018 - 2022*

M.Math. in Statistics — *2017 - 2018*

B.Math. in Statistics and Combinatorics & Optimization — *2013 - 2017*

Work Experience

Business Data Scientist — *Toronto, ON, Canada*

Google — *Oct 2022 - Present*

- Designed and executed online experiments with stakeholders in marketing, finance and executive leadership.
- Measured the incrementality of global ads marketing campaigns via hypothesis tests and causal inference.

Data Scientist — *Waterloo, ON, Canada*

Polyalgorithm Machine Learning — *Nov 2021 - Aug 2022*

- Conducted classification performance validation with a team of 4+ engineers.
- Boosted classification model efficiency by 33% through feature importance analysis.

Evaluation Consultant — *Waterloo, ON, Canada*

University of Waterloo — *Jun 2018 - Apr 2022*

- Conducted and presented results on customer retention, segmentation and tracking from 10+ projects across 6 faculties at the University of Waterloo.
- Designed and hosted academic success workshops targeting 2,000+ math students.

Publications

Flexible mixture regression with the generalized hyperbolic distribution

Kim N.-H. and Browne R.P. (2024), published in *Advances in Data Analysis and Classification 18(1): 33-60*

- **Impact**: Enabled cluster-wise regression modeling with highly skewed residual patterns.

Anderson relaxation test for selecting the intrinsic dimension in model-based clustering

Kim N.-H. and Browne R.P. (2022), published in *Journal of Statistical Computation and Simulation: 1-20*

- **Impact**: Enabled inference on population-wide information richness through hypothesis test-based dimensionality reduction.

In the pursuit of sparseness: A new-rank preserving penalty for a finite mixture of factor analyzers

Kim N.-H. and Browne R.P. (2021), published in *Computational Statistics and Data Analysis 160: 107244*

- **Impact**: Theoretical guarantees on detecting the most important features in each cluster.

Mode merging for the finite mixture of t-distributions

Kim N.-H. and Browne R.P. (2021), published in *Stat 10(1): e372*

- **Impact**: Up to 50 times faster cluster detection than previous methods.

One line to rule them all: Generating LO-shot soft-label prototypes

Sucholutsky I., Kim N.-H., Browne R.P. and Schonlau M. (2021), published in *2021 International Joint Conference on Neural Networks*

- **Impact**: Served as a theoretical foundation for a cognitive science experiment on human participants.

Subspace clustering for the finite mixture of generalized hyperbolic distributions

Kim N.-H. and Browne R.P.(2019), published in *Advances in Data Analysis and Classification 13(3): 641-661*

- **Impact**: 366% improvement in clustering accuracy against previous methods on sign language motion recognition.