

Nam-Hwui (Nam) Kim

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Summary

- **Skills:** Prediction, Inference, Experimental Design, Clustering, Regression, Dimensionality Reduction.
- **Languages (Proficient):** R
- **Languages (Not used recently):** Python, SQL.
- **Domain Knowledge:** Finite Mixture Models, Model Interpretability, Education Psychology, Mathematics Education.

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

- In Ads Marketing Analytics org.

Data Scientist

Waterloo, ON, Canada

POLYALGORITHM MACHINE LEARNING

Nov 2021 - Present

- 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

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.