David Anugraha

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Github: github.com/davidanugraha
Publications: scholar.google.com/citations?user=mKoh-UoAAAAJ

EDUCATION

M.Sc, Stanford University, California, USA — September 2025 - June 2027
Computer Science (Artificial Intelligence) — **Advisor: Prof. Diyi Yang**

B.Sc (Hons), University of Toronto, Toronto, Canada — June 2024
Computer Science Specialist (AI), Statistics Major, Chemistry Minor — GPA: 3.97/4.0

Relevant Courses: Neural Network and Deep Learning, Artificial Intelligence, Computer Vision, Probabilistic Machine Learning, Advanced Probability, Stochastic Processes, Time Series Analysis.

AWARDS

Best Theme Paper (NAACL 2025)	2025
Dean's List Scholar (University of Toronto)	2020 - 2024
Later Life Learning Scholarship (University of Toronto)	2020 - 2022
University of Toronto Excellence Award (UTEA) (declined)	2023

PUBLICATIONS

[14] **mR3: Multilingual Rubric-Agnostic Reward Reasoning Models**
David Anugraha, Shou-Yi Hung, Zilu Tang, Annie En-Shiun Lee, Derry Tanti Wijaya, Genta Indra Winata
Under Review for ICLR 2026

[13] **R3: Robust rubric-agnostic reward models**
David Anugraha, Zilu Tang, Lester James V Miranda, Hanyang Zhao, Mohammad Rifqi Farhansyah, Garry Kuwanto, Derry Wijaya, Genta Indra Winata
Under Review for TMLR
Accepted to NeurIPS 2025 Workshop on Evaluating the Evolving LLM Lifecycle: Benchmarks, Emergent Abilities, and Scaling

[12] **M4-RAG: A Massive-Scale Multilingual Multi-Cultural Multimodal RAG**
David Anugraha, Patrick Amadeus Irawan, Anshul Singh, En-Shiun Annie Lee, Genta Indra Winata.
Under Review for CVPR 2026

[11] **Datasheets Aren't Enough: DataRubrics for Automated Quality Metrics and Accountability**
Genta Indra Winata*, **David Anugraha***, Emmy Liu*, Alham Fikri Aji*, Shou-Yi Hung, Aditya Parashar, and 14 other authors.
Under Review for ACL 2026

[10] **IndoPref: A Multi-Domain Pairwise Preference Dataset for Indonesian**
Vanessa Rebecca Wiyono*, **David Anugraha***, Ayu Purwarianti, Genta Indra Winata.
**Equal Contribution*
AACL Main 2025 ***(Oral)***

[9] **Rethinking what Matters: Effective and Robust Multilingual Realignment for Low-Resource Languages**
Quang Phuoc Nguyen*, **David Anugraha***, Felix Gaschi*, Jun Bin Cheng, En-Shiun Annie Lee
**Equal Contribution*
AACL Main 2025

[8] **Crowdsource, Crawl, or Generate? Creating SEA-VL, a Multicultural Vision-Language Dataset for Southeast Asia**
Samuel Cahyawijaya, Holy Lovenia, Joel Ruben Antony Moniz, Tack Hwa Wong, Mohammad Rifqi Farhansyah, Thant Thiri Maung, Frederikus Hudi, **David Anugraha**, and 84 other authors.
ACL Main 2025

[7] **Humanity's Last Exam**
Long Phan*, Alice Gatti*, Ziwen Han*, Nathaniel Li*, and over 1000 other authors (including **David Anugraha**).
ArXiv:2501.14249

[6] **WorldCuisines: A Massive-Scale Benchmark for Multilingual and Multicultural Visual Question Answering on Global Cuisines**
Genta Indra Winata*, Frederikus Hudi*, Patrick Amadeus Irawan*, **David Anugraha***, Rifki Afina Putri*, and 46 other authors.
**Equal Contribution*
NAACL Main 2025 ***(Best Theme Paper)***

[5] **MetaMetrics: Calibrating Metrics For Generation Tasks Using Human Preferences**
Genta Indra Winata*, **David Anugraha***, Lucky Susanto*, Garry Kuwanto*, Derry Tanti Wijaya
**Equal Contribution*
ICLR 2025

[4] **URIEL+: Enhancing Linguistic Inclusion and Usability in a Typological and Multilingual Knowledge Base**
Aditya Khan, Mason Shipton, **David Anugraha**, Kaiyao Duan, Phuong H. Hoang, Eric Khiu, A. Seza Doğruöz, En-Shiun Annie Lee
COLING 2025 ***(Oral)***

[3] **MetaMetrics-MT: Tuning Meta-Metrics for Machine Translation via Human Preference Calibration**
David Anugraha*, Garry Kuwanto*, Lucky Susanto, Derry Tanti Wijaya, Genta Indra Winata
**Equal Contribution*
Proceedings of the Ninth Conference on Machine Translation, USA. Association for Computational Linguistics.
Winner of Metric Shared Task

[2] **ProxyLM: Predicting Language Model Performance on Multilingual Tasks via Proxy Models**
David Anugraha, Genta Indra Winata, Chenyue Li, Patrick Amadeus Irawan, En-Shiun Annie Lee
NAACL Findings 2025

[1] **Predicting Machine Translation Performance on Low-Resource Languages: The Role of Domain Similarity**
Eric Khiu, Hasti Toossi, **David Anugraha**, Jinyu Liu, Jiaxu Li, Juan Armando Parra Flores, Leandro Arcos Roman, A. Seza Doğruöz, En-Shiun Annie Lee
EACL Findings 2024

TALKS

[2] **Ploutos AI 2025**
R3: Robust Rubric-Agnostic Reward Models

[1] **Toronto Machine Learning Summit 2024**
ProxyLM: Predicting Language Model Performance on Multilingual Tasks via Proxy Models

EXPERIENCE

Research Engineer, Markham, Canada — June 2024 - July 2025
Distributed Data Storage and Management Lab at Huawei Canada

- Team lead on researching the application of LLMs and LMMs to databases for semantic operations, with a particular focus on GaussDB.
- Reduced completion time and resource usage during query execution for multiple users' workloads by at least 25% in low-resource settings.
- Explored data-driven cost query estimation models to optimize query execution by 12%.
- Researching efficient distributed sorting and windowing algorithms for a mix of batch and streaming execution.

Research Assistant, Toronto, Canada — August 2023 - September 2025
Advised by Prof. Annie En-Shiun Lee

- Led and managed teams, collaborating with external partners to research multilinguality and multicultural NLP systems, focusing on efficient and robust methods for low-resource NLP tasks.
- Published 6 papers at top-tier *CL conferences and presented at the Toronto Machine Learning Summit (TMLS) in 2024.

Research Assistant, Toronto, Canada — August 2023 - September 2024
Advised by Prof. Maryam Mehri Dehnavi

- Focusing on optimization and sparse training, particularly for a paper titled "SLoPe: Double-Pruned Sparse Plus Lazy Low-Rank Adapter Pretraining of LLMs" published under ICLR 2025.
- Fine-tuned LMs and LLMs, including LLaMA and BERT, using various compression techniques such as pruning and quantization, and conducted data analysis on their performance against multiple benchmark evaluations.
- Developed sparse kernels in CUDA to implement sparsity in the weights of language models for more efficient pre-training and inference.

Assistant Research Engineer, Markham, Canada — May 2022 – August 2023
Distributed Data Storage and Management Lab at Huawei Canada

- Contributed to the MindPandas project by developing 16 map, reduce, and window operators in both lazy batch and streaming mode, resulting in a 5x increase in performance compared to Pandas and receiving an outstanding team award.
- Conducted research on efficient shuffling algorithms for a potential patent in Huawei's next AI Analytics Engine.
- Maintained and handled 23 requirements from headquarters, researching and implementing possible performance improvements on the MindData codebase.

OTHER PROJECTS

Drug Synergy Prediction

- Designed a preprocessing pipeline for feature extraction from drug and cell data to predict synergy scores for cancer treatment, using DrugComb as the benchmark.
- Implemented a graph-based deep neural network using Torch in Python, improving prediction accuracy by 2x compared to state-of-the-art benchmarks.

Solubility Prediction

- Developed an ML algorithm to estimate the solubility of compounds, a critical task in pharmaceutical chemistry on expediting drug discovery processes.
- Implemented deep neural networks, RandomForest, and XGBoost using TensorFlow in Python, achieving RMSE of 0.81, surpassing results from related papers such as SolTransNet in 2021 with RMSE of 1.141 and Graph Convolutional Neural Network in 2023 with RMSE of 0.86.

PROFESSIONAL SERVICES **Reviewer for ICLR (2025-2026), NAACL (2025), ACL (2025), EMNLP (2025), AACL (2025).**

ADDITIONAL SKILLS

Programming Languages: Python, R, C, C++, Java, CUDA, SQL, Bash, Assembly.
Libraries and Frameworks: Torch, TensorFlow, pandas, NumPy, Spark.
Applications: Docker, Kubernetes, PostgreSQL, Vim, Git, SLURM, LaTeX.
Operating Systems: Unix, Linux, Mac OSX, Windows.