Dung D. Le

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ABOUT ME

Dung D. Le is currently an Assistant Professor of Computer Science in College of Engineering and Computer Science at VinUniversity, where he leads the R2Studio research group on AI-powered Search and Recommendation. He is also the leader of the Living Lab theme at VinUniversity Center for Environmental Intelligence. He is a former senior data scientist in Ads and Personalization team, Grab Holdings Inc. and a former research scientist in School of Computing and Information Systems, Singapore Management University (SMU). He earned his PhD in Data Science and Engineering from SMU, working with Associate Professor Hady W. Lauw. In his candidature, he has been recognized with SMU Presidential Doctoral Fellowship Award (AY2018 and AY2019) and SMU PhD Student Life Award (AY2018 and AY2019). Formerly, he earned his Degree of Engineering in Mathematics and Informatics from Hanoi University of Science and Technology, in 2014. More information about him can be found at: **https://andrew-dungle.github.io**.

RESEARCH INTEREST

His research interest includes recommender systems, information retrieval, and visual analytics. Specifically, the primary focus of his research can be summarized as following: *"Analyzing online data generated by multiple users to better understand their behaviours and preferences, and applying the learnt knowledge to build effective and efficient personalized recommendation systems."*

EDUCATION

School of Information Systems, **Singapore Management University**,
80 Stamford Road, Singapore 178902.

PhD candidate in Data Science and Engineering   Aug 2015 – Nov 2019
  • PhD Thesis: Preference Learning and Similarity Learning Perspectives on Personalized Recommendation
  • Advisor: Hady W. Lauw.

School of Applied Mathematics and Informatics, **Hanoi University of Science and Technology**,
Hanoi, Vietnam.

Degree of Engineer in Mathematics and Informatics
(5-year advanced undergraduate program).   Sep 2009 – May 2014
  • Valedictorian of School of Applied Mathematics and Informatics.

Mathematics class, **Vinh Phuc Gifted high school**,
Vinh Phuc, Vietnam.   Sep 2006 – Jun 2009

PROJECTS

Language Processing Adaptations for Multiple Recommendation Tasks
VinUniversity Seed Grant (PI, Budget: 48K USD)   Jun 2023 – May 2025

SMART-CEM: Applying Artificial Intelligence (AI) and eye-tracking in designing and managing delightful customer experiences in the hospitality sector
VinGroup Innovation Fund (coPI, Budget: 200K USD)   Jan 2023 – Dec 2025

Smart Indoor Air Quality Control System for Healthier and Greener Buildings
VinUni-Illinois Smart Health Center (PI, Budget: 200K USD)   Jan 2022 – Dec 2026

Multimodal Federated Learning for Multi-objectives Recommendation
VinUniversity FastTrack Grant (PI, Budget: 25K USD)   Jun 2022 – May 2024

PUBLICATIONS   **JOURNAL PAPERS**

1. Tran Anh Tuan, Long P. Hoang, Dung D. Le, Tran Ngoc Thang, *A Framework for Controllable Pareto Front Learning with Completed Scalarization Functions and its Applications*, Neural Networks Journal, 2024

2. Quang-Huy Nguyen, Cuong Q. Nguyen, Dung D. Le, and Hieu H. Pham, *Enhancing Few-shot Image Classification with Cosine Transformer*, IEEE Access, 2023

3. Dung D. Le and Hady W. Lauw, *Efficient Retrieval of Matrix Factorization-based Top-k Recommendations: A Survey of Recent Approaches*, Journal of Artificial Intelligence Research (JAIR), 2021

CONFERENCE PAPERS

1. Ngoc-Hieu Nguyen, Tuan-Anh Nguyen, Tuan Minh Nguyen, Vu Tien Hoang, Dung D. Le, Kok-Seng Wong, *Towards Efficient Communication and Secure Federated Recommendation System via Low-rank Training*, The 2024 ACM Web Conference

2. Huy Quang Dao, Lizi Liao, Dung D. Le, Yuxiang Nie, *Reinforced Target-driven Conversational Promotion*, The 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP 2023)

3. Hoang Pham, The-Anh Ta, Shiwei Liu, Lichuan Xiang, Dung D. Le. Hongkai Wen, Long Tran-Thanh, *Towards Data-Agnostic Pruning At Initialization: What Makes a Good Sparse Mask?*, The 2023 Conference on Neural Processing Systems (NeurIPS 2023)

4. T. Nguyen, T. Nguyen, Long Bui, Hai Do, Dung D. Le, Hung Tran-The, Duy Khuong Nguyen, N. Ho, S. J. Osher, R. G. Baraniuk, *A Probabilistic Framework for Pruning Transformers via a Finite Admixture of Keys*, The 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2023)

5. Hoang Phi Long, Dung D. Le, Tran Anh Tuan, Tran Ngoc Thang, *Improving Pareto Front Learning via Multi-Sample Hypernetworks*, AAAI Conference on Artificial Intelligence (AAAI-23)

6. T. Nguyen, T. Nguyen, Dung D. Le, K. Nguyen, A. Tran, R. G. Baraniuk, N. Ho, S. J. Osher, *Improving Transformers with Probabilistic Attention Keys*, The Thirty-ninth International Conference on Machine Learning (ICML 2022)

7. Dung D. Le, Hady W. Lauw, *Collaborative Curating for Discovery and Expansion of Visual Clusters*, The 15th ACM International Conference in Web Search and Data Mining (WSDM-22)

8. Dung D. Le, Hady W. Lauw, *Stochastically Robust Personalized Ranking for LSH Recommendation Retrieval*, AAAI Conference on Artificial Intelligence (AAAI'20), Feb 2020.

9. Dung D. Le, Hady W. Lauw, *Learning Multiple Maps from Conditional Ordinal Triplets*, International Joint Conference on Artificial Intelligence (IJCAI'19), full paper, Aug 2019.

10. Dung D. Le, Hady W. Lauw, *Multiperspective Graph-Theoretic Similarity Measure*, ACM Conference on Information and Knowledge Management (CIKM'18), full paper, Oct 2018.

11. Dung D. Le, Hady W. Lauw, *Indexable Bayesian Personalized Ranking for Efficient Top-k Recommendations*, ACM Conference on Information and Knowledge Management (CIKM'17), full paper, Nov 2017.

12. Dung D. Le, Hady W. Lauw, *Euclidean Co-Embedding of Ordinal Data for Multi-Type Visualization*, SIAM International Conference on Data Mining (SDM'16), full paper, May 2016.

TUTORIAL

1. Dung D. Le, Hady W. Lauw, *Recent Advances on Scalable Retrieval of Personalized Recommendations*, the Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19), January 27 – February 1, 2019.

AWARDS & **SCHOLARSHIPS**	— VinUniversity Teaching Innovation Grant for Academic Year 2023-2024 — VinUniversity Faculty of the Year Award for Academic Year 2021-2022 — VinUniversity Teaching Excellent Award for Academic Year 2021-2022 — Conference Travel Awards: IJCAI 2019, AAAI 2019, CIKM 2018, CIKM 2017, SDM 2016. — Winner of SMU Presidential Doctoral Fellowship Award AY2018 and AY2019. — Recipient of SMU PhD Student Life Award, AY2018 and AY2019. — Postgraduate scholarship, Singapore Management University (Aug 2015). — Honoured as the valedictorian of School of Applied Mathematics and Informatics, Hanoi University of Science and Technology (Sep 2014). — Scholarships of Vietnam National Program for the Development of Mathematics AY13-14, AY12-13. — Lawrence S.Ting scholarship for excellent student AY2011-12. — Honoured as excellent student of AY2011-12. — National Mathematics Competition for University Students (first prize - 2010, second prize - 2011) . — Third prize, Vietnam Mathematics Olympiad (Mar 2009 – high school level).

RESEARCH EXPERIENCE

College of Engineering and Computer Science, VinUniversity
Assistant Professor in Computer Science   Aug 2021 – Present

Ann S. Bowers College of Computing and Information Science, Cornell University
Visiting Scholar   Jan 2023 – Present

Grab Holdings Inc., Singapore,
Senior Data Scientist, Ads and Personalization Department   Jun 2020 – Jul 2021

Singapore Management University,
Research Scientist, School of Computing and Information Systems   Dec 2019 – Jan 2021

Living Analytics Research Centre, School of Information Systems, Singapore Management University
Research Assistant   Oct 2014 – Jun 2015

TEACHING EXPERIENCE

VinUniversity
MATH2020: Discrete Mathematics (Fall 2023)
MATH4010: Advanced Probability and Statistics (Spring 2022, Spring 2023)
CISM2010: Database Concepts and Skills for Big Data (Spring 2022, Fall 2023)
CECS1030: Algorithmic and Computational Thinking (Spring 22)
MATH2010: Probability and Statistics (Fall 2021, Fall 2022)
COMP2030: Software Construction (Fall 2022, Fall 2023)

Singapore Management University
SMU-AY2019/20-Term 1: Graduate Instructor for IS103 Computational Thinking
SMU-AY2017/18-Term 2: Teaching Assistant for IS302 Information Security and Trust
SMU-AY2017/18-Term 1: Teaching Assistant for IS103 Computational Thinking

REFERENCES

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