JOSH (TUAN DUNG) NGUYEN

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EDUCATION

Ph.D. in Computer and Information Science 2023 – now
University of Pennsylvania *Philadelphia, PA, United States*
Advisor: Duncan Watts

M.Phil. in Computer Science 2021 – 2023
Australian National University *Canberra, ACT, Australia*
Advisors: Lexing Xie and Colin Klein

B.S. in Computer Science 2018 – 2020
University of Melbourne *Melbourne, VIC, Australia*
First class honours

EXPERIENCE

Research Associate June 2023 – September 2023
Research School of Astronomy, Australian National University *Canberra, ACT, Australia*
Collaborators: Yuan-Sen Ting and Ioana Ciucă
Project: *Large Language Models for Astronomical Research*

Teaching Assistant March 2020 – Present

COMP4650 *Document Analysis*, Australian National University, 2022.

COMP4680 *Advanced Topics in Machine Learning*, Australian National University, 2022.

COMP4670 *Statistical Machine Learning*, Australian National University, 2022.

COMP5318 *Machine Learning and Data Mining*, University of Sydney, 2021.

COMP4691 *Optimisation*, Australian National University, 2021.

COMP30024 *Artificial Intelligence*, University of Melbourne, 2021.

COMP20008 *Elements of Data Processing*, University of Melbourne, 2020 – 2022.

Summer Research Scholar December 2020 – March 2021
Computational Media Lab, Australian National University *Canberra, ACT, Australia*
Advisor: Lexing Xie
Project: *Data-Driven Understanding of Real-Life Moral Dilemmas*

Research Intern December 2019 – August 2020
Faculty of Engineering, University of Sydney *Sydney, NSW, Australia*
Advisor: Nguyen Tran
Project 1: *Federated Learning with Stochastic Variance Reduced Gradient Algorithms*
Project 2: *Personalized Federated Learning with Moreau Envelopes* (Best CS Project)

Vacation Research Scholar November 2019 – December 2019
School of Mathematics and Statistics, University of Melbourne *Melbourne, VIC, Australia*

Advisor: Charl Ras
Project: *Analysis and Design of R-Resilient Graph Embeddings*

RESEARCH INTERESTS

Computational Social Science, Optimization, Statistical Machine Learning, Distributed Computing, Natural Language Processing, Network Analysis, Statistics, Practical Ethics, AI Safety, Computational Modeling of Social Concepts and Cognitive Science.

HONORS AND AWARDS

Ph.D. Fellowship, Department of Computer and Information Science, University of Pennsylvania, 2023 – now.

Vice-Chancellor's Travel Grant – Higher Degree Research, Australian National University, 2022.

M.Phil. Scholarship, Australian National University, 2021 – 2023.

Summer Research Scholarship, Australian National University, 2020.

Project Recognition, Innovation Expo, Vietnam-Australia Innovation Network (NIC-AU), 2020.

Dean's Honour List, Faculty of Science, University of Melbourne, 2018 – 2020

Undergraduate Student Scholarship, University of Melbourne, 2020.

Summer Research Scholarship, Faculty of Engineering, University of Sydney, 2020.

Summer Research Scholarship, School of Mathematics and Statistics, University of Melbourne, 2019.

PUBLICATIONS

[1] Canh T. Dinh, Nguyen H. Tran, **Tuan Dung Nguyen**, Wei Bao, Amir Rezaei Balef, Bing B. Zhou, and Albert Y. Zomaya. "DONE: Distributed Approximate Newton-type Method for Federated Edge Learning". In: *IEEE Transactions on Parallel and Distributed Systems* 33.11 (2022), pp. 2648–2660.

[2] **Tuan Dung Nguyen**, Georgiana Lyall, Alasdair Tran, Minjeong Shin, Nicholas George Carroll, Colin Klein, and Lexing Xie. "Mapping Topics in 100,000 Real-Life Moral Dilemmas". In: *Proceedings of the International AAAI Conference on Web and Social Media* 16.1 (2022), pp. 699–710.

[3] **Tuan Dung Nguyen**, Amir R. Balef, Canh T. Dinh, Nguyen H. Tran, Duy T. Ngo, Tuan Anh Le, and Phuong L. Vo. "Accelerating Federated Edge Learning". In: *IEEE Communications Letters* 25.10 (2021), pp. 3282–3286.

[4] Canh T. Dinh, Nguyen H. Tran, and **Tuan Dung Nguyen**. "Personalized Federated Learning with Moreau Envelopes". In: *Advances in Neural Information Processing Systems 33*. 2020, pp. 21394–21405.

[5] Canh T. Dinh, Nguyen H. Tran, **Tuan Dung Nguyen**, Wei Bao, Albert Y. Zomaya, and Bing B. Zhou. "Federated Learning with Proximal Stochastic Variance Reduced Gradient Algorithms". In: *49th International Conference on Parallel Processing*. 2020, pp. 1–11.

OTHER ACTIVITIES

Candidate – Vietnam Education Network 2.0 (VEF) Progam, 2022.

Student – Monash University International School in AI and its Applications in CS, 2021.

Student Volunteer – AAAI/ACM Conference on AI, Ethics and Society, 2021.

Student Volunteer – International AAAI Conference on Web and Social Media, 2021.

Student – Cornell, Maryland and Max Planck Pre-Doctoral Research School, 2021.

Secretary – University of Melbourne Competitive Programming Club, 2019 – 2020.

Undergraduate Representative – Melbourne University Mathematics and Statistics Society, 2019 – 2020.

Committee – University of Melbourne Internet of Things Club, 2018 – 2020.