

# JOSH (TUAN DUNG) NGUYEN

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## EDUCATION

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<b>M.Phil. in Computer Science</b> Australian National University Advisors: Lexing Xie and Colin Klein	March 2021 – December 2022 (expected) <i>Canberra, ACT, Australia</i>
<b>B.S. in Computer Science</b> University of Melbourne First class honours	February 2018 – December 2020 <i>Melbourne, VIC, Australia</i>

## EXPERIENCE

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<b>Teaching Assistant</b>  COMP4650 <i>Document Analysis</i> , Australian National University, 2022. COMP4680 <i>Advanced Topics in Machine Learning</i> , Australian National University, 2022. COMP4670 <i>Statistical Machine Learning</i> , Australian National University, 2022. COMP5318 <i>Machine Learning and Data Mining</i> , University of Sydney, 2021. COMP4691 <i>Optimisation</i> , Australian National University, 2021. COMP30024 <i>Artificial Intelligence</i> , University of Melbourne, 2021. COMP20008 <i>Elements of Data Processing</i> , University of Melbourne, 2020-2022.	March 2020 – Present
<b>Summer Research Scholar</b> Computational Media Lab, Australian National University Advisor: Lexing Xie Project: <i>Data-Driven Understanding of Real-Life Moral Dilemmas</i>	December 2020 – March 2021 <i>Canberra, ACT, Australia</i>
<b>Research Intern</b> Faculty of Engineering, University of Sydney Advisor: Nguyen Tran Project 1: <i>Federated Learning with Stochastic Variance Reduced Gradient Algorithms</i> Project 2: <i>Personalized Federated Learning with Moreau Envelopes</i> (Best CS Project)	December 2020 – August 2021 <i>Sydney, NSW, Australia</i>
<b>Vacation Research Scholar</b> School of Mathematics and Statistics, University of Melbourne Advisor: Charl Ras Project: <i>Analysis and Design of R-Resilient Graph Embeddings</i>	December 2019 – February 2020 <i>Melbourne, VIC, Australia</i>

## RESEARCH INTERESTS

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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

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

Master of Philosophy Scholarship, Australian National University, 2021.

Summer Research Scholarship, Australian National University, 2020.

Dean's Honour List, Faculty of Science, University of Melbourne, 2018 – 2020 (top 1.5% of the B.S. cohort).

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

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- [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

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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.