

Dr Bo Dao

Teaching Associate, Faculty of Information Technology, Monash University.

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Curriculum Vitae

Research Summary

Dao is a data scientist and academic with experience in various strategic research approaches. He is holding a Ph.D. degree in information technology with a strong background on applied machine learning, data science, social media analysis, and health analytics from Centre for Pattern Recognition and Data Analytics (PRaDA), Deakin University, Australia. He was a postdoctoral research assistant at PRaDA, Deakin University. In his recent jobs, he has been in charge of implementing machine learning methods for various research problems, such as predicting health outcomes, detecting patterns/activities using hospital and temporal data, or mining social interaction patterns from social media data. He has strong experience in several machine learning methods, such as Random Forests, Lasso, K-means, Bayesian Nonparametric Topic Models, to name a few. He is enthusiastic to bring his research experience in applied data science and advanced analytics into solving exciting real-world problems. Specifically, his research interests are:

- Applied Machine Learning
- Affective Computing and Cognitive Science
- Health Analytics
- Data Science and Analytics
- Timeseries and Similarity Analysis
- Social Media Analysis

Education and Qualifications

- 2012 - 2016 **Doctor of Philosophy (Data Science and Advanced Analytics)**, Deakin University, Australia.
Doctorate thesis: *Social Media as Sensors for Healthcare: A Machine Learning Approach.*
- 2006 - 2008 **Master of Science and Technology Education**, La Trobe University, Australia.
Minor thesis: *An Evaluation on Current XML Twig Pattern Matching Algorithms.*
- 1995 - 2000 **Bachelor of Science (Computer Science)**, Hanoi University of Science, Vietnam.
Thesis: *Sufficient Conditions for Eulerian and Hamiltonian Cycles.*

Employment

- 2018- present **Sessional Teaching Associate**, Faculty of Information Technology, Monash University, Australia.
- 2017- present **Casual Academic**, School of Information Technology, Deakin University, Australia.
- 2016 - 2017 **Research Assistant**, Centre for Pattern Recognition and Data Analytics, Deakin University, Australia.
- 2008 - 2012 **Senior Lecturer & Acting Dean**, Faculty of Information Technology, Binh Dinh College, Vietnam.
- 2001 - 2008 **Lecturer and IT Developer**, Binh Dinh Teacher's Training College, Vietnam.

Honors/Awards

- 2016 *Best Runner-Up Student Paper Award*, IEEE RIVF 2016, Hanoi, Vietnam.
- 2015 *IEEE Computational Intelligence Society (CIS) Travel Grant Award*, US\$ 800.
- 2013 *Full PRaDA Postgraduate Research Top-up Scholarship*, Deakin University (3 years).
- 2012 *Full International Postgraduate Research Scholarship*, PhD degree at Deakin University (4 years).
- 2010 *Full International Postgraduate Research Scholarship*, PhD degree at Uni of Wollongong (3 years, withdrew).
- 2005 *Full ADB-MOET Scholarship for Master course* at La Trobe University, Australia (2,5 years).

Teaching Experience

@Monash University, Melbourne, Australia

- FIT5147 - Data Exploration and Visualization (Tutorials), S1, 2018
- FIT5196 - Data Wrangling (Tutorials), S1, 2018
- FIT5197 - Modelling for Data Analysis (Tutorials), S1, 2018

@Deakin University, Melbourne, Australia

- SIT205 - Thinking Systems and Cognitive Science (Practicals), Tri 2, 2017
- SIT221 - Data Structures and Algorithms (Practicals), Tri 2, 2017

@Binh Dinh College, Binh Dinh, Vietnam

- Introduction to Computer Science; Data Structure and Algorithms, 2001-2005
- Analytical and Data Manipulation, Databases and Information Systems, 2001-2005, 2008-2012
- Object-Oriented Programming Languages; Web Technologies and Development, 2008-2012

Publications

Refereed Journal Articles

- **Dao, B.**, Nguyen, T., Venkatesh, S. and Phung, D. Latent Topic Modelling and Nonparametric Discovery of Online Mental Health-related Communities. *Journal of Data Science and Analytics*, 4(3), 209-231, 2017.
- Nguyen, T., Phung, D., **Dao, B.**, Venkatesh, S., and Berk, M. Affective and content analysis of online depression communities. *IEEE Transactions on Affective Computing*, 5(3), 217-226, 2014. (5-year IF: 3.187).

Conference Refereed Papers

- Ton, L-P., Pham, H-A., and **Dao, B.** Software Abstraction for Casual Games Using Temporal Model: An Alloy-based Approach. *International Conference on Advanced Computing and Applications*, 2017.
- **Dao, B.**, Nguyen, T., Venkatesh, S., and Phung, D. Discovering Latent Affective Transitions among Individuals in Online Mental Health-related Communities. *IEEE International Conference on Multimedia and Expo*, 2016.
- **Dao, B.**, Nguyen, T., Venkatesh, S., and Phung, D. Effect of Social Capital on Emotion, Language Style and Latent Topics in Online Depression Community. *IEEE-RIVF International Conference on Computing and Communication Technologies*, 2016. **Best Runner-Up Student Paper Award**.
- **Dao, B.**, Nguyen, T., Venkatesh, S., and Phung, D. Nonparametric discovery of online mental health-related communities. *International Conference on Data Science and Advanced Analytics*, 2015.
- **Dao, B.**, Nguyen, T., Phung, D., and Venkatesh, S. Effect of mood, social connectivity and age in online depression community via topic and linguistic analysis. *International Conference on Web Information System Engineering*, 2014.
- **Dao, B.**, Nguyen, T., Venkatesh, S., and Phung, D. Analysis of circadian rhythms from online communities of individuals with affective disorders. *International Conference on Data Science and Advanced Analytics*, 2014.
- Nguyen, T., **Dao, B.**, Phung, D., Venkatesh, S., and Berk M. Online social capital: Mood, topical and psycholinguistic analysis. *International AAAI Conference on Weblogs and Social Media*, 2013.
- Tran, T.T. and **Dao, B.** Querying semi-structure based on matching scheme. *National Conference on Information Technology and Communication (@ICT)*, Vietnam, 2008.
- **Dao, B.** and Cao, J. A Glance on Current XML Twig Pattern Matching Algorithms. *International Conference for Computational Science and Its Applications*, 307-321, 2008.

Professional Training

2017 SummerViz 2017 - 1st Australian Summer School on Data Visualization, Monash University.

2015 Online courses: *Machine Learning*; *Text Mining and Analytics*; and *other Data Science Courses*.

2008 High Level Training on Free and Open Source Software Strategies and Management (8 months).

Skills

- **Programming languages:** Matlab, Python, R (proficient), C#, Java, JS, PHP, HTML (familiar), SAS (little familiar)
- **Database Tools:** SQL Server, SQLite, MySQL, Oracle DB, and NoSQL: XML, JSON.
- **Machine learning:** Clustering methods; Topic models; Classification; Predictive models.
- **Data Analytics:** Data visualization (Gephi, D3, Matlab, R and Python); Data exploration; Pattern recognition.
- **Languages:** Vietnamese (native) and English (proficiency).
- **Strengths:** Working independently; Teamwork player; Quick learner; and Good communication.

Professional Services

- Journal Reviewer: *IEEE Transactions on Affective Computing (TAC)*, 2017.
- Conference Reviewer: *Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, 2018.
- Conference TPC Member: *International Conference on Advanced Computing and Applications (ACOMP)*, 2017.

References

- *Professor Dinh Phung*, (Co-Principal Supervisor)
Deputy Director, Centre for Pattern Recognition and Data Analytics, Deakin University,
75 Pigdons Road, Waurin Ponds, Victoria 3216, Australia,
Tel: +61 3 5227 2082, Email: dinh.phung@deakin.edu.au.
 - *Dr Thin Nguyen*, (Principal PhD Supervisor)
Research Fellow, Centre for Pattern Recognition and Data Analytics, Deakin University, Australia,
Tel: +61 3 5247 9717, Email: thin.nguyen@deakin.edu.au
 - *Dr Thanh Nguyen*, (Teaching Supervisor)
Lecturer, School of Information Technology, Deakin University, Australia,
Tel: +61 3 5247 9506, Email: duc.nguyen@deakin.edu.au
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