

JOHN BOAZ LEE

Researcher working in the areas of deep learning, graph & data mining, reinforcement learning, & machine learning.

Education

- 2015–2019 **Worcester Polytechnic Institute**, *PhD in Computer Science (GPA 4.0/4.0)*.
Thesis: Deep Learning on Graph-structured Data
Adviser: Xiangnan Kong
- 2010–2012 **University of the Philippines – Diliman**, *MS in Computer Science (GPA 4.0/4.0)*.
Thesis: A Link Prediction Algorithm for Heterogeneous Bibliographic Information Networks
Adviser: Henry Adorna
- 2004–2008 **Silliman University**, *BS in Computer Science (GPA 3.1/4.0)*.
Thesis: Dumaguete e-Traveler – A Knowledge-based Decision Support System
Adviser: Dave E. Marcial

Experience

- 2020–present **Facebook Research**, *Research Scientist. CA, USA*.
Working on sequence-based as well as graph-based deep learning techniques for inference tasks.
Supervisor: Aude Hofleitner
- summer of **Facebook Research**, *Research Intern. CA, USA*.
2019 Studied the problem of learning a unified user embedding across Facebook's family of apps.
Supervisor: Nima Noorshams
- summer of **Adobe Research**, *Research Intern. CA, USA*.
2018 Worked on a deep learning model for user stitching which resulted in two papers & a patent submission.
Supervisor: Ryan A. Rossi
- summer of **Xerox PARC**, *Research Intern. CA, USA*.
2017 Led a project on graph classification & collaborated on a network representation learning project.
Supervisor: Ryan A. Rossi
- 2015–2019 **Worcester Polytechnic Institute**, *Research Assistant. MA, USA*.
Researched & developed deep learning solutions for relational data. Also worked as a TA from 2015-2018.
Supervisor: Xiangnan Kong
- 2012–2015 **Ateneo de Manila University**, *Instructor. Manila, Philippines*.
Handled the ff. courses: algorithms & data structures, Java/C# programming, & design patterns.
Supervisor: Proceso Fernandez Jr.
- fall of 2012 **Nara Institute of Science and Technology**, *Research Intern. Nara, Japan*.
Proposed & implemented a method for automatic software patch reviewer recommendation.
Supervisor: Akinori Ihara
- 2010–2012 **University of the Philippines – Diliman**, *Instructor. Manila, Philippines*.
Handled the ff. courses: C programming, software engineering, algorithms & data structures.
Supervisor: Rommel Feria
- 2008–2009 **Interprise Solutions**, *Software Engineer. Cebu, Philippines*.
Designed & developed tools used in the application development framework of an ERP system.
- spring of **Neri and Hu Design and Research Office**, *Software Engineer Intern. Shanghai, China*.
2006 Designed & implemented an in-house inventory management system.

Publications

- [1] **J. B. Lee**, X. Kong, C. M. Moore, & N. K. Ahmed. Deep parametric model for discovering group-cohesive functional brain regions. In *Proc. of SIAM International Conference on Data Mining (SDM)*. 2020.
- [2] X. Dai, X. Kong, X. Liu, **J. B. Lee**, & C. Moore. Dual-attention recurrent networks for affine registration of neuroimaging data. In *Proc. of SIAM International Conference on Data Mining (SDM)*. 2020.
- [3] **J. B. Lee**, R. A. Rossi, S. Kim, N. K. Ahmed, & E. Koh. Attention models in graphs: A survey. *ACM Transactions on Knowledge Discovery from Data (TKDD)* 13, 6. 2019.
- [4] **J. B. Lee**, R. A. Rossi, X. Kong, S. Kim, E. Koh, & A. Rao. Graph convolutional networks with motif-based attention. In *Proc. of ACM International Conference on Information and Knowledge Management (CIKM)*. 2019.
- [5] **J. B. Lee** & X. Kong. Learning compact graph representations via an encoder-decoder network. *Applied Network Science (ANS)* 5, 1. 2019.
- [6] G. Nguyen, **J. B. Lee**, R. Rossi, N. Ahmed, E. Koh, & S. Kim. Dynamic network embeddings: From random walks to temporal random walks. In *Proc. of IEEE International Conference on Big Data (BigData)*. 2018.
- [7] **J. B. Lee**, R. A. Rossi, & X. Kong. Graph classification using structural attention. In *Proc. of ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*. 2018.
- [8] G. Nguyen, **J. B. Lee**, R. Rossi, N. Ahmed, E. Koh, & S. Kim. Continuous-time dynamic network embedding. In *Comp. Proc. of International Conference on World Wide Web (WWW)*. 2018.
- [9] **J. B. Lee**, X. Kong, Y. Bao, & C. Moore. Identifying non-linear contrasting networks from time-series data: Application to brain network analysis. In *Proc. of SIAM International Conference on Data Mining (SDM)*. 2017.
- [10] **J. B. Lee**, A. Ihara, A. Monden, & K. Matsumoto. Patch reviewer recommendation in OSS projects. In *Proc. of Asia-Pacific Software Engineering Conference (APSEC)*. 2013.
- [11] **J. B. Lee**, M. Ybañez, M. M. de Leon, and M. R. E. Estuar. Understanding the behavior of Filipino Twitter users during disaster. *Journal on Computing (JoC)* 3, 2. 2013.
- [12] **J. B. Lee** & M. Ybañez. Characterizing behavior and features of participants and observers during disaster on Twitter. In *Proc. of International Conference on Computer Games Multimedia and Allied Technologies (CGAT)*. 2013.
- [13] **J. B. Lee** & H. Adorna. Link prediction in a modified heterogeneous bibliographic network. In *Proc. of International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*. 2012.
- [14] **J. B. Lee**, G. Cabunducan, R. Castillo, F. G. Cabarle, & J. A. Malinao. Uncovering the social dynamics of online elections. *Journal of Universal Computer Science (JUCS)* 18, 4. 2012.
- [15] J. A. Malinao, R. A. B. Juayong, E. R. F. Oquendo, R. M. U. Tadas, **J. B. Lee**, J. B. Clemente, M. S. Gaabucayan-Napalang, J. R. F. Regidor, & H. N. Adorna. A quantitative analysis-based algorithm for optimal data signature construction of traffic data sets. *Journal of Information Processing (JIP)* 20, 3. 2012.
- [16] G. Cabunducan, R. Castillo, & **J. B. Lee**. Voting behavior analysis in the election of Wikipedia admins. In *Proc. of International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*. 2011.

- [17] J. A. Malinao, R. A. B. Juayong, E. R. F. Oquendo, R. M. U. Tadtas, **J. B. T. Lee**, J. B. Clemente, M. S. Gaabucayan-Napalang, J. R. F. Regidor, and H. N. Adorna. A quantitative analysis-based algorithm for optimal data signature construction of traffic data sets. In *Proc. of International Conference on Computers, Networks, Systems, and Industrial Engineering (CNSI)*. 2011.

MANUSCRIPTS

- [1] **J. B. Lee**, G. Nguyen, R. A. Rossi, N. K. Ahmed, E. Koh, & S. Kim. Temporal network representation learning. (*in submission*).
- [2] **J. B. Lee**, X. Kong, & C. Moore. Multi-level group-wise brain region discovery. (*in submission*).
- [3] N. K. Ahmed, R. A. Rossi, **J. B. Lee**, T. L. Willke, R. Zhou, X. Kong, & H. Eldardiry. Role-based graph embeddings. (*in submission*).
- [4] R. A. Rossi, D. Jin, S. Kim, N. K. Ahmed, D. Koutra, & **J. B. Lee**. From community to role-based graph embeddings. (*in submission*).

Professional service

PC member BigData ('18)

Reviewer VLDB Journal ('20), TKDD ('17), TKDE ('17), & JUCS ('12)

Ext. reviewer KDD ('16, '17, '18, '19), SDM ('17, '18, '19), ICLR ('18, '19), IJCAI ('17, '19), ICDM ('19), ASONAM ('17, '18), NIPS ('16, '18), ICDE ('17), AISTAT ('17), CIKM ('16), & AAAI ('16)

Awards

2018 KDD Travel Award, ACM & NSF

2018 GRIE Best Poster Honorable Mention, WPI CS DEPT.

2013 Best Presentation Award, IWESEP

2012 Honors Graduate, PHI KAPPA PHI

2011 Best Poster Paper, ASONAM

2011 Best Poster Paper, NCITE

Computer skills

Programming Python, Java, C#, C, R, MATLAB, \LaTeX , JavaScript, & SQL

Frameworks PyTorch, TensorFlow, Theano, scikit-learn, NumPy, & SciPy

Languages

Native English, Tagalog, & Cebuano

Intermediate Mandarin

References

A full list of references is available upon request.