Lei Le

Contact Information

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Research Interests

Machine Learning and **Artificial Intelligence**.
Representation Learning, particularly tractable regularized dictionary learning; **Optimization**, particularly non-convex optimization over matrix factorization; **Reinforcement Learning**, particularly sparse coding for states and policy learning for continuous actions.

Key skills

Programming languages
C++, Python, PHP, JavaScript, SQL, MatLab, R
Machine learning frameworks
TensorFlow, Keras, PyTorch
Database systems
MySQL
Operating systems
Mac OS, Unix, Linux, Windows

Education

Indiana University, Bloomington, IN, United States

Ph.D, Computer Science, Aug 2013 to (Expected) May 2019

- Advisor: Martha White, Ph.D
- GPA: 3.98 / 4.0
- Ph.D minors: Statistical Sciences

Tongji University, Shanghai, China

Master of Management Science,
Information Management and Information System, Sep 2010 to Mar 2013

- GPA: 3.68 / 4.0

East China Normal University, Shanghai, China

Bachelor of Management Science,
Information Management and Information System, Sep 2006 to Jun 2010

- GPA: 3.75 / 4.0, rank: 1 / 48

Work Experience

Software Engineering Intern for PhD Sep 2018 to Dec 2018
Google, New York City Office
Research and Machine Intelligence Group
Mentor: Ariel Kleiner, Ph.D

Research Experience

Research Assistant Aug 2015 to Present
Department of Computer Science,
Indiana University Bloomington
Supervisor: Martha White, Ph.D

Teaching Experience

Associate Instructor Spring 2015
CSCI-B554: Probabilistic Approaches to Artificial Intelligence at Indiana University Bloomington
Associate Instructor Fall 2014

CSCI-B561: Advanced Database Concepts at Indiana University Bloomington
Associate Instructor Spring 2014 & Fall 2013
CSCI-A110: Introduction to Computers and Computing

Manuscripts

1. **Lei Le**, Ajin Joseph and Martha White. Characterizing optimality of full-rank stationary points for matrix factorization objectives.
2. **Lei Le** and Martha White. Identifying global optimality for dictionary learning.

Publications

1. Vincent Liu, Raksha Kumaraswam, **Lei Le**, and Martha White. The utility of sparse representations for control in reinforcement learning. (Accepted by AAAI 2019)
2. **Lei Le**, Andrew Patterson, and Martha White. Supervised autoencoders: Improving generalization performance with unsupervised regularizers. Advances in Neural Information Processing Systems (NeurIPS, the former NIPS), pages 107-117, 2018
3. **Lei Le**, Raksha Kumaraswamy, and Martha White. Learning sparse representations in reinforcement learning with sparse coding. In Proceedings of the Twenty-Sixth International Joint Conference on Artificial Intelligence, IJCAI-17, pages 2067–2073, 2017
4. **Lei Le**, Emilio Ferrara, and Alessandro Flammini. On predictability of rare events leveraging social media: A machine learning perspective. In Proceedings of the 3rd ACM Conference on Online Social Networks (COSN'15), Palo Alto, CA, USA, November 2015.

Presentations

1. Learning sparse representations for reinforcement learning. AI seminar at University of Alberta, March 29, 2018

Services

Reviewer for AAAI, ICML