

Rizal Fathony

Curriculum Vitae

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Work Experience

- 2021–Present **Lead Data Scientist**
Grab | Indonesia
- 2019 – 2021 **Post-Doctoral Researcher**
Bosch Center for Artificial Intelligence (BCAI), and
Carnegie Mellon University (CMU)
Hosted by: Prof. Zico Kolter | Pittsburgh, Pennsylvania, USA
- 2012 – 2019 **Research Assistant and Teaching Assistant**
University of Illinois at Chicago | Chicago, Illinois, USA
- May–Aug '17 **Research Intern**
Technicolor Research AI Lab | Los Altos, California, USA
- 2009 – 2012 **Data Dissemination and Visualization Developer (Software Engineer)**
Central Bureau of Statistics Indonesia | Jakarta, Indonesia
- 2007 – 2009 **Data Processing Supervisor (Data Engineer)**
Central Bureau of Statistics Indonesia Riau Province | Riau, Indonesia

Educational Backgrounds

- 2014 – 2019 **PhD, Computer Science**, University of Illinois at Chicago (UIC), Chicago, IL.
Advised by: Prof. Brian Ziebart.
- 2012 – 2014 **MS, Computer Science**, University of Illinois at Chicago (UIC), Chicago, IL.
- 2003 – 2007 **BS, Statistical Computing**, Institute of Statistics, Jakarta, Indonesia.

Selected Publications

Note: asterisks*: equal contributions; diamonds◊: alphabetically ordered authors (by last name)

- ICLR 2024 **Consistency Training with Learnable Data Augmentation for Graph Anomaly Detection with Limited Supervision**
International Conference on Learning Representations (ICLR) 2024
Nan Chen, Zemin Liu, Bryan Hooi, Bingsheng He, Rizal Fathony, Jun Hu, Jia Chen
- ICLR 2024 **Partitioning Message Passing for Graph Fraud Detection**
International Conference on Learning Representations (ICLR) 2024
Wei Zhuo, Zemin Liu, Bryan Hooi, Bingsheng He, Guang Tan, Rizal Fathony, Jia Chen
- IJCNN 2023 **Interaction-Focused Anomaly Detection on Bipartite Node-and-Edge-Attributed Graphs**
International Joint Conference on Neural Networks (IJCNN) 2023
Rizal Fathony, Jenn Ng, Jia Chen
- PAKDD 2023 **Fairness for Robust Learning to Rank**
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD) 2023
Omid Memarrast, Ashkan Rezaei, Rizal Fathony, and Brian Ziebart

- ICKG 2022 **PropNit: Scalable Inductive Initialization for Heterogeneous Graph Neural Networks**
IEEE International Conference on Knowledge Graph (ICKG 2022)
Soji Adeshina, Jian Zhang, Muhyun Kim, Min Chen, Rizal Fathony, Advitiya Vashisht, Jia Chen, George Karypis
- ICLR 2021 **Multiplicative Filter Networks**
International Conference on Learning Representations (ICLR) 2021
Rizal Fathony^{*◇}, Anit Kumar Sahu^{*◇}, Devin Wilmott^{*◇}, J. Zico Kolter
- AISTATS '20 **AP-Perf: Incorporating Generic Performance Metrics in Differentiable Learning**
International Conference on Artificial Intelligence and Statistics (AISTATS) 2020
Rizal Fathony, Zico Kolter
- AAAI 2020 **Fairness for Robust Log Loss Classification**
AAAI Conference on Artificial Intelligence (AAAI) 2020
Ashkan Rezaei*, Rizal Fathony*, Omid Memarrast, Brian D. Ziebart
- Thesis 2019 **Performance-Aligned Learning Algorithms with Statistical Guarantees**
PhD Thesis
Rizal Fathony. University of Illinois at Chicago. 2019
- NeurIPS 2018 **Distributionally Robust Graphical Models**
Advances in Neural Information Processing Systems (NeurIPS) 2018
Rizal Fathony, Ashkan Rezaei, Mohammad Bashiri, Xinhua Zhang, Brian D. Ziebart
- ICML 2018 **Efficient and Consistent Adversarial Bipartite Matching**
International Conference on Machine Learning (ICML) 2018
Rizal Fathony*, Sima Behpour*, Xinhua Zhang, Brian D. Ziebart
- NeurIPS 2017 **Adversarial Surrogate Losses for Ordinal Regression**
Advances in Neural Information Processing Systems (NeurIPS) 2017
Rizal Fathony, Mohammad Bashiri, Brian D. Ziebart
- NeurIPS 2016 **Adversarial Multiclass Classification: A Risk Minimization Perspective**
Advances in Neural Information Processing Systems (NeurIPS) 2016
Rizal Fathony, Anqi Liu, Kaiser Asif, Brian D. Ziebart

Invited Talks

- 2024 **Symposium on Machine Learning with Graphs**
Universitas Gadjah Mada (Yogyakarta, Indonesia)
- 2023 **Machine Learning on Graphs Workshop**
Universitas Gadjah Mada (Yogyakarta, Indonesia)
- 2022 **Introduction to Graph Machine Learning**
Indonesian Association for Pattern Recognition (Jakarta, Indonesia)
- 2021 **Statistics vs Machine Learning**
Institute of Statistics (Jakarta, Indonesia)
- 2020 **Goal-Oriented Learning**
Pennsylvania State University (State College, Pennsylvania, USA);
- 2019 **Designing Performance-Aligned Learning Algorithms Using Distributionally Robust Principle**
INFORMS Annual Meeting 2019 (Seattle, Washington, USA)
- 2018 **Performance-Aligned Learning Algorithms with Statistical Guarantees**
Carnegie Mellon University (Pittsburgh, Pennsylvania, USA)

Community Services

Role: Program Committee Member or Reviewer for Leading Conferences/Journals

- Public Library of Science (PLOS) One
- SIAM Journal on Mathematics of Data Science (SIMODS)
- Transactions on Machine Learning Research (TMLR)
- Neural Information Processing Systems (NeurIPS): 2023, 2022, 2021, 2020, 2019, 2018, 2016
- International Conference on Machine Learning (ICML): 2024, 2023, 2022, 2021, 2019
- AAAI Conference on Artificial Intelligence (AAAI): 2023, 2022, 2021, 2020, 2019
- International Conference on Learning Representation (ICLR): 2024, 2023, 2022
- International Conference on Artificial Intelligence and Statistics (AISTATS): 2019
- Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD): 2019
- International Conference on Pattern Recognition (ICPR): 2018

Skills and Experiences

Programming	<u>Scientific</u> : Python, Scala, Julia, MATLAB, R, SPSS, SAS
Language	<u>General</u> : Scala, C#, Java, C, C++, JavaScript, Visual Basic, PHP
	<u>Data</u> : SQL, Spark, PySpark, LINQ, dplyr, SPSS macros, VBA macros
ML & DS	<u>ML</u> : PyTorch, PyTorch Geometric (PyG), Deep Graph Library (DGL), Scikit-Learn, JAX, TensorFlow, NumPy, SciPy, Pandas, Polars, CVXPY, Numba, JuMP Optimization, Convex.jl
	<u>Database</u> : Presto, Trino, PostgreSQL, SQL Server, MySQL, SQLite, MongoDB
	<u>Visualization</u> : Plot: Matplotlib, Plots.jl, ggplot; Map: ArcGIS, QGIS, PostGIS, OpenLayers
Systems	Windows, Linux, MacOS, Docker, Airflow, Git