

Rizal Fathony

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Education

- 2014 – **PhD, Computer Science**, *University of Illinois at Chicago*, Chicago, Illinois, USA.
Present Advisor: Prof. Brian D. Ziebart.
- 2012 – 2014 **MS, Computer Science**, *University of Illinois at Chicago*, Chicago, Illinois, USA.
- 2003 – 2007 **BS, Statistical Computing**, *Institute of Statistics*, Jakarta, Indonesia.

Publications

- In Submission **[1] Distributionally Robust Graphical Models**
Submitted to NIPS 2018
Rizal Fathony, Ashkan Rezaei, Mohammad Bashiri, Xinhua Zhang, Brian D. Ziebart
- Conference **[2] Efficient and Consistent Adversarial Bipartite Matching**
International Conference on Machine Learning (ICML), 2018
Rizal Fathony*, Sima Behpour*, Xinhua Zhang, Brian D. Ziebart
- [3] Adversarial Surrogate Losses for Ordinal Regression**
Advances in Neural Information Processing Systems (NIPS), 2017
Rizal Fathony, Mohammad Bashiri, Brian D. Ziebart
- [4] Adversarial Multiclass Classification: A Risk Minimization Perspective**
Advances in Neural Information Processing Systems (NIPS), 2016
Rizal Fathony, Anqi Liu, Kaiser Asif, Brian D. Ziebart
- Workshop **[5] Discrete Wasserstein GANs**
IEEE Information Theory and Applications Workshop (ITA) 2018
Rizal Fathony, Naveen Goela
- Preprint **[6] Kernel Robust Bias-Aware Prediction under Covariate Shift**
ArXiv Preprints, 2016
Anqi Liu, **Rizal Fathony**, Brian D. Ziebart

Research Interest

- Interest:
- Convex surrogate losses
 - Statistical consistency
 - Multivariate metrics
 - Robust adversarial prediction
 - Structured prediction
 - Graphical models
 - Approximate inference
 - Causal machine learning
 - Deep learning
 - Bayesian machine learning
 - Multi-task learning
 - Learning under constraints

Completed and Ongoing Research

2015–Present **Performance-Aligned Learning Algorithms with Statistical Guarantees**

My research focuses on designing robust adversarial learning algorithms for various tasks that simultaneously align with the learning objective by incorporating the performance metrics or loss functions into the learning process and provide the statistical guarantee of Fisher consistency:

- Multiclass classification
- Ordinal classification
- Bipartite matching in graphs
- Tractable graphical models
- Taxonomy classification
- Multivariate metrics

Manuscript Reviews

Role: Program Committee Member or Reviewer for Main Conferences

- 2019 AAAI Conference on Artificial Intelligence (AAAI) 2019
- 2018 Neural Information Processing Systems (NIPS) 2018
- 2018 International Conference on Pattern Recognition (ICPR) 2018
- 2016 Neural Information Processing Systems (NIPS) 2016

Teaching Assistantship

- Fall 2016 CS 412 – Introduction to Machine Learning
- Spring 2016 CS 412 – Introduction to Machine Learning
- Fall 2015 CS 491 – Introduction to Machine Learning

Work Experience

2016 – **Research Assistant**

- Present *University of Illinois at Chicago* | Chicago, Illinois, USA
Research assistant at Prof. Brian Ziebart's lab on robust adversarial learning algorithms design for various machine learning problems.

May – August **Research Intern**

- 2017 *Technicolor Research AI Lab* | Los Altos, California, USA
Research intern in deep learning area, especially in generative adversarial networks (GAN) architectures and applications.

2015 – 2016 **Teaching Assistant**

- University of Illinois at Chicago* | Chicago, Illinois, USA
Teaching assistant for the "Introduction to Machine Learning" class for three semesters.

2008 – 2012 **Statistical Dissemination System Developer**

- Central Bureau of Statistics Indonesia* | Jakarta, Indonesia
Developed web-based statistical data dissemination and visualization systems for major surveys and censuses conducted by Central Bureau of Statistics Indonesia.

Honors and Awards

- 2016, 2017 NIPS Travel Award.
- 2012 – 2014 International Fulbright Master of Science and Technology Scholarship Award.
- 2010 Runner Up Developer at Indonesia Open Source Festival - Android Apps Competition.
- 2009 Nominee of Research and Development Category at Asia Pacific Information and Communication Technology Award (APICTA), Melbourne, Australia.
- 2009 Best Research and Development Category at Indonesia Information and Communication Technology Award (INAICTA), Jakarta, Indonesia.
- 2003 – 2007 Grantee of a full scholarship from the Indonesian government during my undergraduate study.

Skills

- Scientific Advanced: *Julia, MATLAB, Python, R*; Intermediate: *Lua*
- General Advanced: *C#, Java, Python*; Intermediate: *C, C++, Javascript*; Beginner: *Scala, Swift*
- Library Advanced: *PyTorch, KNet, Numpy, Scipy*; Intermediate: *TensorFlow, MXNet*