FEDERICO ERRICA

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Probabilistic Deep Learning for Graphs

EDUCATION

University of Pisa, Italy *November 2018 - February 2022*
Ph.D. *w. honors* in Computer Science
Title: **Bayesian Deep Learning for Graphs**
Supervised by Davide Bacciu and Alessio Micheli

University of Pisa, Italy *March 2018*
M.Sc. in Computer Science (110/110 Hons.)

University of Pisa, Italy *October 2015*
B.Sc. in Computer Science (110/110)

EXPERIENCE

NEC Laboratories Europe GmbH January 2022 - Present
Research Scientist *Heidelberg, DE*

University College London January 2021 - May 2021
Visiting Scholar *Virtual*

Facebook AI Research June 2019 - September 2019
Research Intern *London, UK*

Laife Reply March 2018 - October 2018
Machine Learning Researcher *Milano, IT*

SELECTED PUBLICATIONS

Errica, F. & Niepert, M. *Tractable Probabilistic Graph Representation Learning with Graph-Induced Sum-Product Networks* in ***ICLR*** (2024).

Errica, F. *On Class Distributions Induced by Nearest Neighbor Graphs for Node Classification of Tabular Data* in ***NeurIPS*** (2023).

Errica, F., Bacciu, D. & Micheli, A. PyDGN: a Python Library for Flexible and Reproducible Research on Deep Learning for Graphs. ***Journal of Open Source Software*** (2023).

*Castellana, D., *Errica, F., Bacciu, D. & Micheli, A. *The Infinite Contextual Graph Markov Model* in ***ICML*** **(* Equal Contribution)** (2022).

Errica, F., Bacciu, D. & Micheli, A. *Graph Mixture Density Networks* in ***ICML*** (2021).

Bacciu, D., Errica, F. & Micheli, A. Probabilistic Learning on Graphs via Contextual Architectures. ***Journal of Machine Learning Research***. **(First Author)** (2020).

Bacciu, D., Errica, F., Micheli, A. & Podda, M. A Gentle Introduction to Deep Learning for Graphs. ***Neural Networks*** **129. (Equal Contribution)**, 203–221 (2020).

Errica, F., Podda, M., Bacciu, D. & Micheli, A. *A fair comparison of graph neural networks for graph classification* in ***ICLR*** **(Equal Contribution)** (2020).

Bacciu, D., Errica, F. & Micheli, A. *Contextual Graph Markov Model: A Deep and Generative Approach to Graph Processing* in ***ICML*** **(First Author)** (2018).

MAIN GITHUB PROJECTS

PyDGN *Link*
A Research Library for Deep Graph Networks

gnn-comparison *Link*
A Fair, Robust, and Reproducible comparison of Deep Graph Networks

GMDN *Link*
Graph Mixture Density Networks

CGMM *Link*
Contextual Graph Markov Model

HONOURS AND AWARDS

ICLR 2022 Highlighted Reviewer Award
Awarded by the Program Chairs for the reviews' quality

HPC-Europa3 Transnational Access
Project proposal selected for a visiting period at the University of Cambridge

2nd place - Ilaria Castelli Award *Link*
Best Master's Degree Thesis on Machine Learning and Pattern Recognition

ICML 2018 Travel Award
Grant by the International Machine Learning Society

TALKS

ESANN 2023 *October 2023*
Introduction to Graph Representation Learning

NEC Laboratories Europe GmbH *July 2021*
Bayesian Deep Learning for Graphs

IBM *April 2021*
Graph Representation Learning: from Neural Beginnings to Probabilistic Perspectives

Continual AI *April 2021*
Presentation about our work on Catastrophic Forgetting for Deep Graph Networks

ACTIVITIES

Reviewer
TNNLS, TPAMI, TKDE, AI, ICML, ICLR, NeurIPS, IJCAI, AAAI, Neurocomputing, Scientific Reports, IJCNN, ESANN, ICANN

Co-organizer of Special Sessions on Deep Learning for Graphs
IJCNN 2023, ESANN 2023/2022, LOD2022.

Co-organizer of MLDM 2023/2022 (AIxIA)
The Italian Workshop on Machine Learning and Data Mining

Co-organizer of ESANN 2021 Special Session
Complex Data: Learning Trustworthily, Automatically, and with Guarantees

Teaching Assistant
Machine Learning *2020-2021*
Computational Neuroscience *2019-2020*

LANGUAGES

Italian
Native Speaker

English
Cambridge C2 Proficiency (CPE) - grade B (219/230)

German
A1 Level