Oleksandr Shchur

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Research interests

The main topic of my research is machine learning for temporal data and graphs. Specifically, I'm interested in temporal point processes (probabilistic models for continuous-time event data), generative models, time series forecasting and graph neural networks.

Education

Ph.D. in Computer Science   since 2017
Technical University of Munich, Germany
Advisor: Prof. Stephan Günnemann

M.Sc. in Computational Science and Engineering   2013 – 2016
Technical University of Munich, Germany
GPA: 1.9 (German grading system)

B.Sc. in Aerospace Engineering   2009 – 2013
National Aviation University, Kyiv, Ukraine
GPA: 86/100 (Ukrainian grading system)

Work experience

Research science intern   2021
Facebook AI Research, Remote
• Developing approaches for unsupervised detection of toxic content online
• Modeling dynamics of online discussions with temporal point processes

Applied science intern   2020 – 2021
Machine Learning & Forecasting team, AWS AI, Berlin, Germany
• Added temporal point process support to the GluonTS forecasting library
• Developed a new approach for anomaly detection in event data (NeurIPS 2021)
• Wrote a survey paper on neural temporal point processes (IJCAI 2021)

Scientific employee   since 2017
Technical University of Munich, Germany
• Various research projects on machine learning for temporal and graph data
• Giving lectures & tutorials (Machine Learning, ML for Graphs and Sequential Data)
• Supervised 13 thesis projects and 4 guided research projects

Skills

Programming languages & frameworks
• Python, PyTorch, TensorFlow, Python Scientific Stack, Git, Bash

Languages
• English (full professional proficiency), Russian (native), Ukrainian (native), German (B2)

Publications

Detecting Anomalous Event Sequences with Temporal Point Processes
Shchur O., Türkmen A. C., Januschowski T., Gasthaus J., Günnemann S.
Neural Information Processing Systems (NeurIPS)

2021

Neural Temporal Point Processes: A Review
Shchur O., Türkmen A. C., Januschowski T., Günnemann S.
International Joint Conference on Artificial Intelligence (IJCAI)

Fast and Flexible Temporal Point Processes with Triangular Maps
Shchur O., Gao N., Biloš M., Günnemann S.
Advances in Neural Information Processing Systems (NeurIPS)
(Oral presentation, top 1% of submitted works)
Code: github.com/shchur/triangular-tpp

2020

Intensity-free Learning of Temporal Point Processes
Shchur O.*, Biloš M.*, Günnemann S.
International Conference on Learning Representations (ICLR)
(Spotlight presentation, top 6% of submitted works)
Code: github.com/shchur/ifl-tpp

Overlapping Community Detection with Graph Neural Networks
Shchur O., Günnemann S.
Deep Learning on Graphs Workshop, KDD
Code: github.com/shchur/overlapping-community-detection

2019

Dual-Primal Graph Convolutional Networks
Monti F., Shchur O., Bojchevski A., Litany O., Günnemann S., Bronstein M.
Graph Embedding and Mining Workshop, ECML−PKDD

Pitfalls of Graph Neural Network Evaluation
Shchur O.*, Mumme M.*, Bojchevski A., Günnemann S.
Relational Representation Learning Workshop, NeurIPS
Code: github.com/shchur/gnn-benchmark

2018

Anomaly Detection in Car-Booking Graphs
Shchur O., Bojchevski A., Farghal M., Günnemann S., Saber Y.
Workshop on Data-driven Intelligent Transportation, ICDM

NetGAN: Generating Graphs via Random Walks
Bojchevski A.*, Shchur O.*, Zügner D.*, Günnemann S.
International Conference on Machine Learning (ICML)

* equal contribution

Scientific community service

(External) reviewer
- ICML, NeurIPS, ICLR, KDD, AAAI, ICDM, ECML-PKDD