Yash Garg

https://yashgarg1232.github.io
Machine Learning Researcher, Nokia Bell Labs
PhD in Computer Science

INTERESTS

Representation Learning, Convolutional Networks, Time Series Analysis, Tabular Data Mining, Language Models, Automated Machine Leanring, Interpretable AI

EDUCATION

PhD in Computer Science   Dec 2020
Arizona State University   Tempe, AZ, US
· Recipient of Graduate Collage Doctoral Fellowship
· Recipient of Computer Science Doctoral Fellowship
· Outstanding Mentor Award
· ACM Student Grant

M.S. in Computer Science   Dec 2015
Arizona State University   Tempe, AZ, US

B.E. in Computer Science & Engineering   Jun 2013
Rajiv Gandhi Technological University   Bhopal, MP, India

EXPERIENCE

Nokia Bell Labs   Jan 2021 - Present
Machine Learning Researcher   Murray Hills, NJ, US
· Automated end-to-end framework for tabular and sequential data processing and modelling.
· Data-driven approach that extracts insight from any data set in a domain-agnostic way to facilitate the model building process.

Arizona State University   May 2015 - Dec 2020
Graduate Research Assistant   Tempe, AZ, US
· Developed a principled approach to discover insights from the data to perform **single-shot hyperparameter search** and **retraining-free sparsification** of network parameter.
· Leveraged **multi-scale patterns** contained in the data to design novel **attention mechanism**, such as localized, cross, and multi-scale multi-head attention, for **multimedia retrieval**.

Nokia Bell Labs   Jun 2019 - Aug 2019
Data Science Intern   Murray Hills, NJ, US
· Developed an **automated representation** learning framework for rare event detection in streams.
· Designed a **budgeted** approach to *learn* the **length of buffer window** for learning representation for streaming time series. Patent in review.

Eaton Corporation   May 2018 - Aug 2018
Data Science Intern   Menomonee Falls, WI, US
· Designed a **deep ensemble model** for **time series forecasting** in large-scale sensor network.
· Developed a NodeJS based **spatio-temporal visualization** engine for 1000s sensor.

TECHNICAL STRENGTHS

AI/Machine Learning	Tensorflow, Keras, PyCaret, Scipy, scikit-learn, Pandas, h5py
Frameworks	MLFlow, Sphnix, MKDocs, GitFlow, Docker, DataIKU, Einblick
Models	VGG, ResNet, InceptionNet, Transformers, BERT
Databases	MongoDB, MySQL, PostgreSQL
Web Technologies	JavaScript, jQuery, HTML, CSS

PEER-REVIEWED PUBLICATIONS

⋆ First Author | ⋄ Co Author | + Equal Contribution | `https://yashgarg1232.github.io/research/`

Conferences

⋆ XM2A: Multi-Scale Multi-Head Attention with Cross-Talk, MIPR 2021

⋆ SDMA: Saliency-Driven Mutual Cross Attention, ICPR 2021

⋆ SAN: Scale-Space Attention Network, ICDE 2020

⋆ iSparse: Output Informed Sparsification of Neural Networks, ICMR 2020

⋆ RACKNet: Robust Allocation of Convolutional Kernels in Neural Networks, ICMR 2019

+⋆ On the Effectiveness of Distance Measures for Similarity Search in Sensory Data, ICMR 2017

Journals

⋄ Selego: Robust Variate Selection for Accurate Time Series Forecasting, ECML-PKDD 2021

+ DataStorm: Coupled, Continuous Simulations for Complex Urban Environment, TDS 2021

⋄ DataStorm-FE: A Data and Devision-Flow Engine for Coupled Simulation Ensembles, VLDB 2018

Demonstrations

+ SIMDMS:Data Management and Analysis to Support Decision Making Through Large Simulation Ensembles, EDBT 2017

Workshop

⋆ ReTriM: Recontructive Triplet Loss for Learning Reduced Embeddings for Multi-Variate Time Series, ICDMW, HDM 2021

+ Load-Adaptive Continuous Coupled-Simulation with DataStorm and Chameleon, CC 2019

⋄ NOTES2: Network-of-Traces for Epidemic Spread Simulations, AAAI Workshop, 2015

Dissertation/Thesis

⋆ On Feature Saliency and Deep Neural Networks, Ph.D. Dissertation, Arizona State University, 2020

⋆ Multi-Variate Time Series Similarity Measures and their Robustness Against Temporal Asynchrony, MS Thesis, Arizona State University, 2015

Patents

⋄ Akyamac, Ahmet, Lehman, Gerald, and *Garg, Yash*, "Apparatus, Method, and System for Providing a Sample Representation for Event Prediction". Filed Jan 8, 2020 (FI). In Review.