YASH GARG

https://yashgarg1232.github.io

Machine Learning Researcher, Nokia Bell Labs

Ph.D. in Computer Science

TECHNICAL STRENGTHS

AI/Machine Learning	Tensorflow, PyTorch, Keras, PyCaret, Scipy scikit-learn, Pandas
Languages	MatLab, Python, R, Java
Databases	MongoDB, MySQL, PostgreSQL
Web Technologies	JavaScript, jQuery, HTML, CSS

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 hyper-parameter 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.

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

SELECTED PROJECTS

AutoRep: Automated representation learning for data streaming   Python

· Developed a novel framework for **streaming data** (over cloud) from remote location for **rare event detection**. Designed a **budgeted** approach to **adaptively** *learn* the **length of buffer window** for learning representation with high variability. Patent in review.

StormViz: An analytics tool for decision-making in hurricane   HTML, CSS, JS, MongoDB

· Developed a *spatio-temporal* **visualization** engine. Stored unstructured data in MongoDB for scalable data storage and indexing. Implemented variety of visualization using Leaflet Maps API

QTagger: Real-time tag recommender for Stack Overflow Questions   Python

· Implemented a real-time state-full LSTM-based *top-5* tag recommendation engine for user provide question. Processed 1.6 million questions with 87k potential tags. Performed data wrangling, trained word-2-vec model, and trained a tag deep recommender model

PEER-REVIEWED PUBLICATIONS

$\star$ First Author | $\diamond$ Co Author | + Equal Contribution | https://yashgarg1232.github.io/research/

Conferences

$\star$ XM2A: Multi-Scale Multi-Head Attention with Cross-Talk, MIPR 2021

$\star$ SDMA: Saliency-Driven Mutual Cross Attention, ICPR 2021

$\star$ SAN: Scale-Space Attention Network, ICDE 2020

$\star$ iSparse: Output Informed Sparsification of Neural Networks, ICMR 2020

$\star$ RACKNet: Robust Allocation of Convolutional Kernels in Neural Networks, ICMR 2019

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

Journals

$\diamond$ Selego: Robust Variate Selection for Accurate Time Series Forecasting, ECML-PKDD 2021

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

$\diamond$ 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

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

$\diamond$ NOTES2: Network-of-Traces for Epidemic Spread Simulations, AAAI Workshop, 2015

Dissertation/Thesis

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

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

Patents

$\diamond$ 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.