Trang Nguyen

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SUMMARY

Ph.D. in Computer Science student with a research interest in Explainable AI (XAI), Time Series Analysis, and Sequential Learning.

EDUCATION

University College Dublin, Ireland — 09/2019 - 05/2024
Ph.D. Candidate, Computer Science (Machine Learning) — (*Expected*)

Arizona State University, Tempe, AZ — 08/2016 - 05/2018
M.Sc., Business Analytics
M.B.A., Operational Management & Strategy

Nanyang Technological University, Singapore — 08/2008 - 06/2012
B.Sc., Maritime Studies

TECHNICAL SKILLS

Programming	Python, R
Big Data	PySpark 2.1
Database	MySQL, PostgreSQL
Software	Tableau, Redash, LaTeX
Libraries	Python: TensorFlow, PyTorch, Pandas, Numpy, Matplotlib, Scikit-learn R: caret, dplyr, ggplot2

RESEARCH EXPERIENCES

Time Series Classification with Explanation — 11/2019 - Present
Ph.D. Candidate, University College Dublin

- Advisor: Dr. Georgiana Ifrim, University College Dublin
- ***Themes:*** *Explainable AI (XAI), Time Series Classification, Sequence Learning*
- Research on methods and framework to evaluate both intrinsic and post-hoc XAI Methods
- Investigate Reliability and Robustness of post-hoc Deep Learning based XAI methods in Time Series Classification tasks
- Devise model-agnostic evaluation metrics to evaluate, measure, and compare quality of explanation across different algorithms
- Published and presented papers at ECML Workshop 2020, 2021

Purchased Transportation Rate Prediction Model — 09/2017 - 05/2018
Data Analytics Consultant (Operations Research), FedEx Corporation & Arizona State University

- Proposed the idea of combining machine learning techniques and time series analysis to make prediction
- Gathered, cleaned, analyzed, engineered features from multiple sources to build predictive model that saved time and human efforts of doing manual budgeting
- Delivered a prediction model using Random Forest and Time Series Analysis that achieved Mean Absolute Percent Error (MAPE) of under 5% on 3-month data test data

Behavioral Patterns Driving Success of Virtual Education — 08/2016 - 05/2018
Graduate Research Assistant (UX Research), EDPlus at Arizona State University

- Performed large-scale data pre-processing and visualization on edX database with Python and R
- Explored behavior-based patterns driving metrics using principal component analysis and factor analysis
- Conducted feature importance analysis with Random Forest and Logistics Regression based on success metrics such as course completion and student retention
- Recommended a data-driven user-experience (UX) and course design for ASU's M.Sc. Computer Science, contributing to the launch of the program on Coursera in Fall 2018

INDUSTRY EXPERIENCES

Trusting Social Ltd., Vietnam 08/2018 - 07/2019
Data Analyst

Trusting Social is a fin-tech startup reinventing credit scoring by combining Big Data technology with social, web, and mobile data. At Trusting Social, I worked directly with Chief Scientist and Lead Data Scientist on Credit Score and Income Score Modeling projects. My tasks include:

- Researched and enhanced accuracy of Credit Score V2 model, achieving Gini coefficient of 0.65-0.95 on back-testing datasets
- Conducted data preparation, data quality monitoring, feature engineering, and hyper parameters tuning on 100TB+ dataset using PySpark
- Participated in the experimental development of Income Score Model; Delivered Income Score V1 model for production after 8 months
- Evaluated, back-tested the Credit Scoring model; Advised optimal use of credit score for different products based on model back-test result

Shun Shing Group International, Singapore 09/2012 - 06/2016
Forward Freight Analyst (2014/16) & Market Research Analyst (2012/14)

Shun Shing Group is a trading, manufacturing, and shipping company. At Shun Shing Group, I worked in shipping department, specializing in providing both in-house and third-parties commodities traders with future ocean-shipping freight for dry-bulk commodities. My tasks include:

- Designed experiments to diagnose features driving contract pricing
- Performed hypothesis testing of the independent variables to confirm statistical significance
- Led a market research analyst team to analyze, predict, and offer future prices to commodity traders
- Proposed, researched, and implemented use of Monte Carlo simulation and Stochastic process in price modeling and scenario analysis using @RISK

TEACHING EXPERIENCES

I am a Teaching Assistant for the following modules at University College Dublin:

Fall 2022	COMP47490	Machine Learning
Spring 2022	COMP47350	Data Analytics
Spring 2021	COMP47350	Data Analytics
Fall 2020	COMP47490	Machine Learning
	COMP20240	Relational Databases and Information Systems
Spring 2020	COMP47350	Data Analytics
	COMP40725	Introduction to Relational Databases and SQL Programming

PUBLICATIONS

Nguyen T.T., Le Nguyen T., Ifrim G. (2020) ***A Model-Agnostic Approach to Quantifying the Informativeness of Explanation Methods for Time Series Classification***. In: ECML Workshop 2020. Published in conference proceedings and part of Lecture Notes in Computer Science, vol 12588 (Springer, Cham). `https://doi.org/10.1007/978-3-030-65742-0_6`

Agarwal S.*, **Nguyen T.T.***, Le Nguyen T., Ifrim G. (2021) ***Ranking by Aggregating Referees: Evaluating the Informativeness of Explanation Methods for Time Series Classification***. In: ECML Workshop 2021

AWARDS & HONORS

Science Foudation Ireland Scholarship, University College Dublin 09/2019 - present

Forward Focus Scholarship, Arizona State University 08/2016 - 05/2018

Winner of Donald J. Bowersox Graduate Case Competition, Arizona State University 10/2017

PROFESSIONAL ACTIVITIES

Reviewer, European Conference on Machine Learning (ECML) 07/2022

Reviewer, International Workshop on Advanced Analytics & Learning on Temporal Data (AALTD) 07/2022

CERTIFICATIONS

Natural Language Processing Specialization, DeepLearning.AI	08/2020
Database Systems Concepts and Design, Georgia Institute of Technology	12/2018
10-Course Data Science Specialization, Johns Hopkins University	12/2017
Machine Learning, Stanford University	07/2017

LANGUAGES

Vietnamese	Native
English	Fluent