Curriculum Vitae

Jinqiang Yu
PhD student at Monash University
Email: yuekamkeung@gmail.com

I am passinate at the research in data science and AI areas. My reserach experience cultivates my research skill as well as further improves my enthusiasm for research. I am currently working on the PhD project at Monash University supervised by Prof. Peter J. Stuckey and Dr. Alexey Ignatiev.

Education

Feb 2021 - May 2024

Doctor of Philosophy
Data science / AI department, Faculty of IT
Monash University, Australia

Thesis titles:
Efficient Incrementality in Learning Solvers

Principle supervisor: Prof. Peter J. Stuckey
Associate supervisor: Dr. Alexey Ignatiev

Mar 2019 - Dec 2020
WAM: 81.1 / 100

Master of Information Technology
Monash University, Australia

Core units:

- FIT5202 Data procession for big data
- FIT5211 Algorithm and data structure
- FIT5197 Statistical data modelling
- FIT5149 Applied data analysis
- FIT5216-18 Master thesis

Research Experience

Feb 2020 - Jan 2021

Master Minor Thesis
Monash University, Australia

Topic

Computing optimal decision sets and lists with SAT

Description

Arguably, the most explainable machine learning models use decision rules. The project focuses on decision sets and decision lists. The study provides the advanced approach to determine minimum-size decision sets and decision lists that achieve minimum empirical risk and then investigate sparse alternatives where we trade accuracy for size. By finding optimal solutions, we show we can build the classifiers that are almost as accurate as the best heurisic methods, but far more concise, and hence more explainable.

Dec 2020 - Present

Information Technology PhD Program
Monash University, Australia

Topic

Efficient Incrementality in Learning Solvers

Description

Reasoning, constraint solving and optimisation technologies have made remarkable progress over the last two decades. This project is devoted to tackling the challenges arising in the incremental use of a learning solver applied to various practical problems. In particular, the project will develop novel techniques for the incremental use of core-guided MaxSAT and CP solvers in the context of a series of optimisation queries.

Publication

[CoRR-20] **Optimal Decision Lists Using SAT**
CoRR abs/2010.09919, 2020
Jinqiang Yu, Alexey Ignatiev, Pierre Le Bodic, Peter J. Stuckey

[CP-2020] **Computing Optimal Decision Sets with SAT**
In International Conference on Principles and Practice of Constraint Programming (Rank A)
Jinqiang Yu, Alexey Ignatiev, Peter J. Stuckey, Pierre Le Bodic
Best Paper Award in CP/ML Track
Invitied to submit to the Award Winning Paper Track of JAIR

Scholarship and Awards

2021 - 2024
Faculty of Information Technology Research Scholarship
The scholarship covers living expenses in the whole PhD program.

2021 - 2024
Faculty of Information Technology International Postgraduate Research Scholarship
The scholarship includes course fees and oversea student health cover (OSHC) in the whole PhD program.

Aug 2020
Best Paper Award
Our paper 'Computing Optimal Decision Sets with SAT' has been selected for the Best Paper Award for the CP/ML Track of CP 2020.

Professional skills

Proficient in Python, Java, R, and SQL.
Familiar with Spark, MongoDB, MATLAB and C++

Reference

Prof. Peter J. Stuckey
Professor Peter J. Stuckey is a Professor in the Faculty of Information Technology at Monash University, leader in the optimisation research group of Monash University, and project leader in the Data61 CSIRO laboratory. Peter Stuckey is a pioneer in constraint programming, the science of modelling and solving complex combinatorial problems.

Personal page: https://people.eng.unimelb.edu.au/pstuckey/

Dr. Alexey Ignatiev
Dr. Alexey Ignatiev is a Senior Lecturer at the Optimisation research group of the Faculty of Information Technology of Monash University. Currently, his research is mainly focused on the development and improvement of highly efficient SAT- and SMT-based (satisfiability modulo theories) decision and optimization procedures targeting a variety of important practical applications in AI: from software package upgradability and Boolean formula minimization to model-based diagnosis (MBD), software fault localization and eXplainable AI (XAI).

Personal page: https://alexeyignatiev.github.io/