Sivakumar Palanisamy

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RESEARCH INTEREST

Theoretical Machine Learning; Deep Learning; Reinforcement Learning; Near-optimal algorithms for Computationally hard problems in Graphs; Complexity Analysis; I am also curious about interdisciplinary research and applications related to my study.

EDUCATION

Coimbatore Institute of Technology (Affiliated to Anna University) 2012-16
B.E. in Computer Science and Engineering

WORK EXPERIENCE

Zoho Corporation Pvt. Ltd. 2016-21
Member Technical Staff - Senior software developer in Zoho Payroll

- I modelled our database for the optimal functioning of several features in multiple editions.
- Developed an algorithm to avoid brute force implementation of an auto-computation in one of the product modules.
- Performed code refactoring and implemented several Object-Oriented Programming concepts to facilitate smooth support for future editions.
- Studied and applied necessary algorithms for building an ML software used by my team.

SELECTED PROJECTS

Branching Heuristics impact analyser (GitHub)
A research project - developed to study the impact of various branching heuristics in an Argumentation Framework solver. The corresponding research paper of this project is mentioned in the publication section.

A New Framework for model training (GitHub)
I developed a new framework from scratch using vector implementation in Python. A simple way to define and train CNN models.

GraphDS-Adjacency Matrix Generator (GitHub)
The project will generate adjacency matrices for the top 11 datasets that we (our team) chose for a research project. The GitHub repository contains the details of the graph datasets.

Model Comparator (GitHub)
PyTorch project - train two models simultaneously, compare them based on multiple factors like training time, efficiency and test accuracy after each approach.

PUBLICATION

Ramraj Thirupathyraj, **Sivakumar Palanisamy**. Examining the effectiveness of branching heuristics in a CDCL-type SAT solver for Argumentation Framework [under review in Expert Systems With Applications] (2021)

TEACHING INVOLVEMENTS

Teaching Assistant 2015-16
Prof. Ramraj Thirupathyraj, Department of Artificial Intelligence and Data Science, Coimbatore Institute of Technology.

- Data Structures and Algorithms - I & II (09CS33 & 09CS43)
- DataBase Management Systems (09CS56)

Member of Placement Helper Program 2015-16
Department of Computer Science, Coimbatore Institute of Technology.

- Volunteered the program to help undergraduates who struggled with Data Structures, Algorithms and DBMS necessary for placements.

Mentor 2017-21
Zoho Books Team

- I was involved in the group that focussed on providing essential skills for a new employee to master our team's internal architecture and framework.

RESEARCH EXPERIENCE

Research Assistant 2021 - Present
Prof. Ramraj Thirupathyraj, Department of Artificial Intelligence and Data Science, Coimbatore Institute of Technology.

- Worked on a research project to provide a Quantized Graph Similarity Measure based on important graph properties.
- Performed empirical study on Graph Isomorphism with Filtration Curves to assess graph similarity by analyzing the difference between the Filtration Curves in the mathematical space.

TALKS

Student Induction Program 2021
Coimbatore Institute of Technology.
Topic: How to kick start your AI journey?