ARUN PALANIAPPAN THIAGARAJAN

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EDUCATION

PSG College of Technology, Coimbatore   July '16 - Present
MSc Data Science (Integrated five year program)
CGPA (upto 8th semester): 9.02/10

RESEARCH EXPERIENCE

Indian Institute of Technology Madras   Jan '21 - Present
Research Intern under Kamakoti Veezhinathan   Chennai

- Exploring deep learning based methods for detecting malware from network traffic.

Data Driven Analysis of FCI's Operations and Recommendations   May '20 - October '20
Working paper with Shamshu Dharwez, Nehal Muthu

- We collected available open data, studied operations of Food Corporation of India and found gaps in allotment and offtake of Indian states.

- We found factors which influence states proposals, efficient utilization of foodgrains, challenges in providing food security under the current system and suggested policy recommendations.

TCS Research   May '19 - October '19
Research Intern under Sharadha Ramanan   Chennai

- Studied dynamic pricing of interdependent and perishable products using reinforcement learning techniques.

- Proposed a Q-learning model which achieved a yield of 16% higher than passive pricing techniques in simulated environment.

KEY PROJECTS

Intelligent Character Recognition using Tensorflow   June 2020

- Used IAM dataset and augmented the dataset with noise added data points to build a robust convolutional netural network to recognize handwritted words.

- Performed gradient clipping, used l_∞-norm loss and achieved an accuracy of 44%.

Resume Parser   Febraury 2020

- Extracted email-id, skill set, phone number, educational qualifications and experiences from a resume using regex based techniques with text preprocessing.

- Found relevance of resume to the position applied by using document similarity metrics.

Budget Analyzer   March 2019

- Built an application to keep track of users income and expenses using MongoDb for backend and PyQt for front end. The application gives prediction for future expenses using time-series analysis.

Decoding Motor-movement from EEG signals   October 2018

- Studied the use of support vector machines and explored mutliple kernel based support vector machines for decoding raw EEG signals into motor movements
- Used data from BCI Competition IV and achieved an accuracy of 60%.

RELEVANT COURSES

- **Computer Science** - Data Structures, Design and Analysis of Algorithms, Database Systems, Computer Networks, Data Mining, Supervised and Unsupervised Learning, Reinforcement Learning.
- **Mathematics** - Calculus and its Applications, Theory of Probability, Applied Statistics, Graph Theory, Stochastic Models, Predictive Analytics, Linear Algebra, Operations Research, Network Science, Game Theory.

ACADEMIC INTERESTS

Machine Learning, Security, Economics

TECHNICAL SKILLS

- **Strong** - Python, Rstudio, MongoDB
- **Familiar** - MATLAB, C/C++, MySQL
- **Tools** - Pytorch, Tensorflow, OpenCV, Git, LaTeX

ACADEMIC SERVICE

- Led the development of Machine Learning study group at PSG College of Technology and organized weekly online meetings to discuss machine learning papers and concepts.
- Conducted Cricket and Statistics program and Excel for Sports at Mango Education for kids aged between 11 - 15.

EXTRACURRICULARS AND ACHIEVEMENTS

- Selected for ACM Winter School on Cybersecurity, 2019 organized by NISER Bhubaneshwar.
- Participated virtually in Theory of Reinforcement Learning Boot Camp organized by Simons Institute for Theory of Computing.
- Secured Fifth rank (99th percentile) in maths olympiad organized by Department of Mathematics, PSG College of Technology.
- A member of Coimbatore Toastmasters Club between 2017-2019 and served as Secretary of the club between July 2018-Dec 2018.
- Obtained Finisher medal in Amma marathon conducted by government of Tamil Nadu for cancer awareness at Coimbatore.

REFERENCES

- Dr. Latha R, Assistant Professor, Department of Applied Mathematics and Computational Science, PSG College of Technology, Coimbatore. Contact: rla.amcs@psgtech.ac.in
- Dr. Sharadha Ramanan, Principal Scientist, TCS Research, Chennai. Contact:sharadha.ramanan@tcs.com