ARUN PALANIAPPAN THIAGARAJAN

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EDUCATION

PSG College of Technology, Coimbatore July '16 - Present
MSc Data Science
CGPA (upto 8^{th} semester): 9.02/10

RESEARCH EXPERIENCE

Data Driven Analysis of FCI's Operations and Recommendations May '20 - Ongoing
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 and suggested policy recommendations.

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

- Studied dynamic pricing of interdependent and perishable product 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.
- Used cross-entropy loss function and achieved an accuracy of 54%.

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.

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%.

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.

RELEVANT COURSES

- **Computer Science** - Data Structures, Design and Analysis of Algorithms, Database Systems, 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, Network Science[1], Game Theory[1]

ACADEMIC INTERESTS

Machine Learning, Economics, Network Science

TECHNICAL SKILLS

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

ACADEMIC SERVICE

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

EXTRACURRICULARS AND ACHIEVEMENTS

- Currently participating in weekly meetings of RL Theory Seminar organized by Gergely Neu, Ciara Pike-Burke, Csaba Szepesvari.
- Participated in ACM Winter School on Cybersecurity, 2019 conducted at NISER Bhubaneshwar.
- Wrote my study notes on multi-arm bandits as blogs at https://arunpalaniappan.github.io/
- Secured fifth rank in maths olympiad organized by Department of Mathematics, PSG College of Technology.
- 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

[1]Courses currently undertaking