ADITHYA MADHUSOODANAN

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EDUCATION

National Institute of Technology Karnataka, Surathkal *July 2018 - Present*
B.Tech in Electrical and Electronics Engineering Overall GPA: 8.02/10

National Institute of Technology Karnataka, Surathkal *July 2019 - Present*
Minor in Information Technology Overall GPA: 8.33/10

Silver Hills Public School, Kozhikode *April 2018*
Class 12, Central Board of Secondary Education Overall 95.4%
Physics, Chemistry, Maths, Computer Science

Silver Hills Public School, Kozhikode *April 2016*
Class 10, Central Board of Secondary Education GPA:10/10

ACHIEVEMENTS

- Among top 0.8% in JEE Mains 2018 (amongst 1,200,000 candidates)
- Among Top 0.3% in Kerala State Engineering Entrance Exam (KEAM) (amongst 90,000 candidates)
- Secured Zonal Rank 35 and International Rank 1671 for the 10th SOF International Mathematics Olympiad
- Identified as a 'Bright Spot' in the state of Kerala by Vikram Sarabhai Science Initiative
- Secured first rank for Mathrubhumi Silver Bullet Exam

EXPERIENCE

University of Southampton, United Kingdom September 2020 - Present
Remote Research Student, School of Mathematical Sciences

· Interpreting and analysing genomic sequences as a natural language processing problem
· Analysis of genomic sequence specifically SARS-CoV-2 DNA sequences using Support Vector machine and convolutional neural networks
· Design and experimentation to optimize machine learning models
· Using Bilevel optimisation techniques for optimising Support vector machines
Project Guide: Prof. Alain B. Zemkoho

University of Surrey, United Kingdom Apr 2020 - Nov 2020
Remote Summer Research Student, Department of Computer Science

· Analyzed and compiled a dataset consisting of images and video sequences containing streams of water
· Implemented the object detection algorithm You Look Only Once (YOLO) on the dataset to detect streams of water in a video sequence
· Tracked the detected objects using KCF and CSRT Tracker from the OpenCV library
Project Guide: Prof. Frank Guerin

SQE Assurance, Derby, United Kingdom Aug 2019 - Jun 2020
Systems Developer

· Creating Customized SharePoint pages containing dashboard reports using PowerBi

- Handling content types, customizing forms via JSON and VS codes
- Developing apps for SharePoint using PowerApps

Indian Institute of Science, Bangalore, India May 2019 - Jul 2019
Summer Student, Spintronics and Thin Film Magnetism Labs

- Studied Quadratic Magneto-optical Kerr effect (QMOKE) properties of Fe_3O_4 thin films.
- Employed ReMagX Software for the X-ray reflectivity data fitting of thin films.
- Measured Magneto-optical Kerr effect (MOKE) properties of Mica thin films under various compressions.
  Project Guide: Prof. PS Anil Kumar

PROJECTS & RELEVANT PUBLICATIONS

Analysis of COVID-19 tweets November 2020 - Present

- Classification of tweets related COVID-19 based on whether they are informative or not using TFIDF - SVM and Bidirectional Encoder Representations from Transformer models
- Studying a relationship between the spread of COVID-19 and the spread of misinformation
- Interpreting the results produced by models using t-distributed stochastic neighbor embedding
  Project Guide: Prof. M Anand Kumar

Human Gait Analysis and Correction - July 2020 - Present

- Studying gait phases of human motion by applying machine learning classification algorithms on data collected from sensors mounted on a human test subject.
- Using Recurrent Neural Networks for gait recognition using the collected data
  Project Guide: Prof. Krishnan CMC

Optical Number Recognition - Jul 2018 - Mar 2019
IEEE National Institute of Technology, Surathkal

- Developed an Optical Number Recognition product that can read handwritten numbers and store them as text using handheld devices like a mobile camera.

Publications
Conference - EAI MobiQuitous 2020

- Authored and presented the paper '*Machine Learning Approach to Manage Adaptive Push Notifications for Improving User Experience*'.
  Co-authors: Prof. M Anand Kumar, Bilal Yousuf, Kieran Fraser

EXTRACURRICULAR ACTIVITIES

Executive member, Flying and Robotics Club NITK

Member, Marketing and Publicity Team, Incident 2019 (Annual cultural festival of National Institute of Technology Karnataka)

Volunteered for the Open House Programme at the Centre for Water Resources Developement and Management (Jaladarshan 2017), Kozhikode, India - had a hands on experience on the methodologies and techniques that can be used to save water and other natural resources.