Sumanth Murthy
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Cambridge, United Kingdom

EXPERIENCE

Mentor
Muslim Researchers Network, United Kingdom
February 2024 - Present
Chosen as a mentor by the Muslim Researchers Network to aid researchers and students in Palestine to build technologies in digital healthcare. Currently working with a telecommunications professor to build a sentiment analysis platform to spread the use of scientifically-rooted tools and techniques and improve health outcomes.

Expert and *Product Owner*
FruitPunch, United Kingdom/Netherlands/Remote
May 2024 - Present
Chosen by FruitPunch AI to serve as an expert and a mentor for their contests and skill development courses, starting with the "AI for Greener Datacenters" challenge.
Working as a Product-Owner and team lead for the LLM team in the "AI for farmers" challenge.

Machine Learning Scientist and *Engineer*
CYTED, Cambridge, United Kingdom
November 2022 - June 2024
Part of the R&D team at Cyted leading imaging and computer vision.
Launched and leading the effort to accurately determine the extent of Barrett's Esophagus through Semantic Segmentation, previous work has focused only on classification models due to a lack of expensive annotations on the H&E Whole Slides.
The initial models achieved a Dice score of 0.79 for tiles in the test set containing tiles with tissue overlap of at least 25%.
Simultaneously, I'm building Deep Learning models for genomic data and working with the rest of R&D to integrate other data modalities to build a multi-modal pipeline for Barrett's diagnosis and the entire GI tract.
Co-authored a paper published in Nature about weakly supervised models to detect Atypia from Whole Slide Imaging, specifically, the TFF3 stain: https://www.nature.com/articles/s41467-024-46174-2

Data Scientist
Sperry Rail, Derby, United Kingdom
March 2021 - September 2022
I was part of the then newly created Digital Innovation team and one of the two data scientists working on detecting cracks and flaws in rails, dealing with projects across North America and Europe, particularly Switzerland.
Built Computer Vision Models to:
A. Reduce the number of False Positives from 30000 to 3000, hence reducing the number of images that the analysis team has to inspect.
B. Separate cracks of different sizes so as to reduce False Negatives that arose from smaller defects.

Software Engineer
Liquid Analytics, Toronto, Canada
June 2019 - April 2020
Liquid Analytics is an e-commerce startup dealing in wine and spirits
As the first member on the data science team, I set up the data engineering pipeline which was to be used for a Product Recommendation engine using data from several sources such as Order forms, Customer reviews and Invoices, among others.
Set-up a batch processing pipeline, designed APIs and worked with DevOps and Product Management to test a rudimentary recommendation engine.

Research Assistant
University of Toronto, Toronto, Canada
January 2016 - August 2018
Project 1: Parametric and Non-Parametric analyses of Neuronal Behaviour using

SKILLS

Scripting Languages:
Python, C++, R, Julia and MATLAB
Other:
Numpy, Scipy, Scikit-learn,, BioPython, Linux ROS, Spark, PyTorch, Simulink, Blender ,AWS, Google Cloud, SageMaker, ROS and OpenCV.
Algorithms, Data Analytics, Optimization, Neural Networks, Data Visualization, Statistics, LLM, Genome Sequencing and Generative Artificial Intelligence.

AWARDS

Winner of EWB Canada business case study contest
Fellow, StartingBloc institute in 2016, Washington DC Chapter: https://startingbloc.org/fellowship/
Delegate : World Business Dialogue 2016
ELITE Certification in Project Management

LINKS

Most of my projects and code can be found here: http://www.github.com/sumanth0892
LinkedIn (Including licenses and certifications): http://www.linkedin.com/in/sumanth0892

the Fitzhugh-Nagumo model. Analyzed the flow of a signal using the Hodgkin-Huxley Circuit and studied properties such as the Phase Coherence Index, Maximum Lyapunov Exponent and Correlation Dimension. Built Neural Networks and Volterra Models for the reconstruction of the signal.
Project 2: Built an Image Processing system and the downstream Neural network to detect damage in coral reefs. with techniques involved were Weber Local Descriptor, Histogram Analysis and ZCA Whitening using libraries such as OpenCV and Tensorflow.

Operations Manager
Triumph Gear Systems, North York, Canada
January 2016 - May 2016
I was part of the three member team which redesigned the production and shipping routes for two important parts, one for GE and the other Honeywell.
The goal of the project was to analyze the current routing diagram for two parts and propose a new process that would improve the production cycle time
Reduced the Production time for the GE shaft by 8.5 hours per part
Reduced the Production time for the Honeywell shaft by 4.75 hours per part
Collated data from the sensors attached to machines and built Remaining Useful Life (RUL) models to determine when the machine will need to be repaired
This led to savings of $331,000 from both parts.

Research Assistant
VT University
April 2013 - July 2014
Built Statistical Learning techniques to analyze data obtained from a wind energy generation facility to predict power output a day ahead and hence aid in load-demand studies and increase the penetration of wind into the main grid.
Model 1: Multivariable regression using Temperature, Humidity and Atmospheric Pressure.
Model 2: Time Series with techniques such as ARIMA and Exponential Smoothing.
We also published our results in two outlets.

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EDUCATION
Master's degree (MSc) in Electrical and Computer Engineering
University of Toronto, Canada
September 2015 -August 2018
Relevant Coursework - Supervisory Control of Discrete Event Systems, Hybrid Control Systems, Digital Image Processing and Neural Engineering.
As a central theme/project to my research, I worked on various imaging systems, from underwater rovers, coral reefs and manufacturing environments.
Earned a Robotics certification.
Activities and Societies:
Vice-President of the ECE Graduate Students' Society
Engineers Without Borders

Bachelor of Engineering (BEng Hons.) in Electrical Engineering
VT University, India
September 2010 - June 2014
Relevant Coursework - Renewable Energy Systems, Power System Analysis, Advanced Numerical Theory, Digital Signal Processing and Linear Algebra
Activities and Societies:
Quiz Bowl team
Renewable Energy club.

PUBLICATIONS:
https://ieeexplore.ieee.org/document/6974632 as Sumantha Pareekshit
http://www.ijcrd.com/files/Vol_3_issue_5/041121.pdf as Sumantha Pareekshit
https://www.nature.com/articles/s41467-024-46174-2 as Sumanth Murthy