

**Sumanth Murthy**  
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## EXPERIENCE

### *Computer Vision Lead and Machine Learning Scientist*

#### **CYTED, Cambridge, United Kingdom**

November 2022 - Present

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%.

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>

### *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.

### *Senior 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.

### *Lead 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 the Fitzhugh-Nagumo model. Analyzed the flow of a signal using the

+447448271091

**Cambridge, United Kingdom**

## 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>

Google Scholar:

<https://scholar.google.com/citations?user=EmFpI3sAAAAJ&hl=en>

## OTHER

Reviewer for ICLR 2025

(<https://iclr.cc/>)

Reviewer MLIS 2024

(<https://www.machinelearningconf.org/>)

Reviewer for the IJAAILM

(<https://researchlakejournals.com/index.php/AAILM/>)

Reviewer for ICAISE-2024

(<https://icaise.org/review.html>)

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.

## **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

## **PUBLICATIONS:**

<https://ieeexplore.ieee.org/document/6974632> as Sumantha Pareekshit

[http://www.ijcird.com/files/Vol\\_3\\_issue\\_5/041121.pdf](http://www.ijcird.com/files/Vol_3_issue_5/041121.pdf) as Sumantha Pareekshit

<https://www.nature.com/articles/s41467-024-46174-2> as Sumanth Murthy