Saleena T.S | Assistant Professor

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# ABOUT ME

* 10+ years of experience in the area of Computer Science including teaching and development.
* Accomplished Python Deep Learning expert with hands-on experience in designing, developing, and deploying cutting-edge neural network models for various real-world applications.
* Proficient in utilizing popular Deep Learning frameworks such as TensorFlow-Keras, and PyTorch to create custom architectures and optimize existing models for optimal performance.
* Demonstrated expertise in computer vision, NLP and Speech analysis having successfully created models for tasks like image classification, image segmentation, text analysis for plagiarism checks.

# PROFESSIONAL EXPERIENCE

* + Currently working as Assistant Professor at ST. JOSEPH ENGINEERING COLLEGE, VAMANJOOR, MANGALURU since December 2023.
	+ Worked as Teaching Assistant of UpGrad Campus at LOVELY PROFESSIONAL UNIVERSITY, PUNJAB from September 2023 to December 2023.
	+ Worked as Research Associate in ICFOSS, Trivandrum from July 2022 to September 2023
	+ Worked as an online python and Machine Learning tutor for foreign students (USA) through Growing Stars Inc
	+ Worked as Assistant Professor in Computer Science Department at SULLAMUSSALAM SCIENCE COLLEGE, AREEKODE, MALAPPURAM from

August 2018 to October 2019.

* + Currently working as an approved counselor of INDIRA GANDHI NATIONAL

OPEN UNIVERSITY since 2015.

* + Worked as lecturer in computer science at COLLEGE OF APPLIED SCIENCE, VAZHAKKAD during Oct 2015 to March 2016.
	+ Worked as lecturer in computer science at JDT ISLAM ARTS AND SCIENCE COLLEGE, CALICUT during June 2012 to March 2013.
	+ Worked as Senior Software Engineer at Nucore Software Solution Pvt Ltd. Calicut for

2.9 years (August 2009 to April 2012) (Python).

# EDUCATION

* Currently pursuing PhD in Computer Science under University of Calicut (done pre- synopsis submission) Year: Since November 2019
* MPhil in computer science under Bharathidasan University acquired 78 percentage. College: JJ College of Arts and Science, Pudukkottai, Trichy. Year: 2019
* Qualified UGC NET Exam Year: 2017
* MCA under University of Calicut, acquired 70 percentage. College: NIELIT Calicut. Year: 2009
* BSc Physics Degree under University of Calicut, acquired 91.2 percentage. College: St. Joseph’s College Devagiri, Calicut. Year:2006

# SKILLS

Operating System : Windows, Ubuntu Languages : Python, HTML, Javascript

Frameworks : Flask, Turbogears

CMS : Drupal

Databases : MySQL, PostgreSQL, SQLite

Webserver : Nginx Version Control Tool : Git

# SOCIAL NETWORKS

Google scholar ID: <https://scholar.google.com/citations?user=WNyzdwEAAAAJ&hl=en&oi=ao>

ORCID: 0000-0001-5709-355X

SCOPUS ID: 57329751400

# PUBLICATIONS

* + Semantic Web in Healthcare: A Systematic Literature Review of Application, Research Gap, and Future Research Avenues. *International Journal of Clinical Practice*, *2022*. https://doi.org/10.1155/2022/6807484(SCI indexed)
	+ Deep Learning Techniques for Quantification of Tumour Necrosis in Post- neoadjuvant Chemotherapy Osteosarcoma Resection Specimens for Effective Treatment Planning,*Acta Informatica Pragensia*, *12*(1), 87-103,2023 doi: 10.18267/j.aip.207(Scopus indexed)
	+ MedChecker- An Ensembled Deep-Learning-based Classification Model, doi: [10.1109/NEleX59773.2023.10421465](https://doi.org/10.1109/NEleX59773.2023.10421465)
	+ Synthetic Dataset Generation From Histopathology Images For Quantizing Necrosis In Post Neo-Adjuvant Chemotherapy Resection Specimen,*2023 2nd International Conference on Computational Systems and Communication (ICCSC)*, Thiruvananthapuram, India, 2023, pp. 1-5, doi: 10.1109/ICCSC56913.2023.10143027.(IEEE Xplore)
	+ AI-Powered Semantic Segmentation and Fluid Volume Calculation of Lung CT Images in COVID-19 Patients. In *Emergent Converging Technologies and Biomedical Systems* (pp. 93-101). Springer, Singapore, Online ISBN: 978-981-16- 8774-7, 2022,https://doi.org/10.1007/978-981-16-8774-7\_9 (Scopus indexed)
	+ A 3D Designed Portable Programmable Device Using Gas Sensors for Air Quality Checking and Predicting the Concentration of Oxygen in Coal Mining Areas In: Reddy, V.S., Prasad, V.K., Wang, J., Reddy, K.T.V. (eds) Soft Computing and Signal Processing. ICSCSP 2022. Smart Innovation, Systems and Technologies, vol 313. Springer, Singapore. https://doi.org/10.1007/978-981-19- 8669-7\_49
	+ (18)F-FDG PET/CT- An Effective Diagnostic Tool for Non-Small Cell Lung Cancer: A Review Journal of the Maharaja Sayajirao University of Baroda ISSN

: 0025-0422 – UGC CARE GROUP 1 journal,2021

* + Comparison of K-Means Algorithm and Hierarchical Algorithm using Weka Tool, International Journal of Advanced Research in Computer and Communication Engineering ,ISO 3297:2007 Certified, Vol. 7, Issue 7, July 2018.

# BOOK CHAPTERS

* + - Saleena Thorayanpilackal Sulaiman, Muhamed Ilyas Poovankavil, Abdul Jabbar Perumbalath (2023, August). Classification Tool to Predict the Presence of Colon Cancer Using Histopathology Images - Pp. 33-46 (14), Deep Learning: Theory, Architectures, and Applications in Speech, Image, and Language Processing, DOI: 10.2174/9789815079210123010001
		- Saleena, T. S., Ilyas, P. M., and Kareem, K. S. (2023). Gabor filter as feature

extractor in anomaly detection from radiology images. Intelligent Systems and Applications in Computer Vision.

**CONFERENCE PAPER PRESENTATION**

* + Presented a paper **MedChecker- An Ensembled Deep-learning based Classification Model,** in IEEE International Conference on Next Generation Electronics held at VIT Vellore.
	+ Presented a paper **Synthetic Dataset Generation from Histopathology Images for Quantizing Necrosis in Post Neo-Adjuvant Chemotherapy Resection Specimen** in IEEE conference at LBS Institute of Technology for Women, Poojappura, Thiruvananthapuram and included the paper in IEEE Xplore
	+ Presented a paper “**Semantic Segmentation of Necrotic Tissues in Post Neo- adjuvant Chemotherapy Resection Specimens using Auto-Encoder Network**” in International Conference on Advances in Data Science Challenges with Big Data Analysis (ICADSC2022)
	+ Presented the paper “**AI-Powered Semantic Segmentation and Fluid Volume Calculation of Lung CT images in Covid-19 Patients**” International Conference on “Emergent Converging Technologies and Biomedical Systems, (ETBS-2021)” 28th-29th April 2021 Organized by University Institute of Engineering & Technology Kurukshetra University, Kurukshetra (Springer)

# SIGNIFICANT PROJECTS

## ✔ Deep Learning Techniques for Quantification of Tumor Necrosis in Post- neoadjuvant Chemotherapy Resection Specimens for Effective Treatment Planning.

This software helps the doctors to take treatment plan decisions based on its output. The input given to this will be histopathology images of cancer patients who underwent some kind of chemotherapy. We have used deep learning algorithms and image processing techniques to do this work.

Environment: Image processing using python, pytorch

## ✔ Malayalam plagiarism checker

Software that used as a plagiarism checker for Malayalam text contents. The searching has been done using Google API and text similarity check has been done.

Environment: Python, Google API

## ✔ Medicinal plant detection using Computer Vision and online repository creation

Mobile application and web-portal for plant classification using Computer Vision,

preservation of medicinal values of plants present in India.

Environment: Python, flask, flutter, pytorch

## ✔ AI-Powered Semantic Segmentation and Fluid Volume Calculation of Lung CT images in Covid-19 Patients

Segmentation tool for lung CT images in covid-19 patients. Environment: Python, U-Net and DeepLabV3+

## ✔ Training ANNs to study the structure-activity relationships of anti-diabetic phyto chemicals

Find the molecular structure activity of anti-diabetic drugs using Artificial intelligence techniques.

Environment: SVR(Support Vector Regression), Python, Flask, Heroku

## ✔ TRAACS PREMIUM (Travel Accounting Software)

TRAACS is a complete travel “mid & back office” transaction processing system that is being used by several travel agencies in the Middle East.

Environment: Python, Database: PostgreSQL

✔ **TRAACS GOLD**

Web version of TRAACS.

Environment: Python, Database: PostgreSQL, Frame work : TurboGears

# COURSES AND CERTIFICATIONS

* + - “Introduction to Science of Cancer” in Canvas Network by The Ohio State University
		- “Python for Data Science” by IIT Madras (NPTEL-SWAYAM)
		- “Fundamentals of Deep Learning for Computer Vision” by NVIDIA Deep Learning Institute
		- “AI for Medical Diagnosis” by Coursera
		- “Support Vector Machine with scikit-learn” by Coursera
		- “Machine Learning A-Z” by Udemy

# ADDITIONAL POSITIONS

* Guest editor for the publication of conference proceedings of International Conference FOSS-CIL T23, during February 2023
* Completed a 4-month internship at MG University Campus as part of ASPIRE scholarship,

Directorate of Collegiate Education, Govt. of Kerala

* Finalist in Idea pitching contest of 2021, conducted by YIP program under Kerala Development and Innovation Strategic Council (K-DISC)
* Resource person for Skill Development Program at Central University of Kerala in association with ICFOSS in the topic “Machine Learning through Python” on 22nd February 2024
* Resource person for 2-days hands-on training program on Python at Assumption College Changanassery during 16-17 March 2023.
* Served as resource person in 3-day online workshop on Python for school students held dur- ing May 29th to 31st May.
* Resource person in webinar “Advancement in the Era of Artificial Intelligence” on 2nd June 2021
* Resource person for the add-on program series II, **Machine Learning using Python** spon- sored by **ENHANZIA** conducted by Sullamussalam Science College, Areekode
* Co-ordinator of 2 day workshop on **Machine learning and Data science** at Sullamussalam Science College, Areekode during 7th - 8th March 2020
* Co-ordinator of the Webinar on **Academic Integrity and Publication Ethics** at Sullamus- salam Science College, Areekode on June 27 2020
* Invited talk on **Industrial Inroads to Success** at Department of Computer Science at St. Mary’s College, Puthanangadi.
* Invited talk on **Industrial Inroads to Success** at PG Department of Computer Science, Majlis Arts and Science College.

# REFERENCES

* Dr. Muhamed Ilyas P.

 Principal, Sullamussalam Science College, Areekode

 Malappuram – 673639 - Principal@sscollege.ac.in

* Mr. Muhamed Niyas C

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