Sreelakshmi GOPAKUMARANNAIR

Computer Vision and Machine Learning Researcher

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About me

Grounded and solution-oriented researcher, adept at motivating self and others.Highly passionate about pursuing a career in the field of:

- Algorithms
- Machine Learning
- Computer Vision
- Deep Learning

Work Experience & Projects

Present – Feb 2019
Research Assistant, University of Trento, Italy
- The goal of my work is to solve the problem of lack of old maps, using a generative adversarial network (GAN), to generate images, given input from an ancient text.
- I am currently working on the implementation of GAN and GUI for retro remote sensing using Python3 and Tensorflow.

Python3 | Tensorflow | Visual Studio | Keras | GAN

June 2018 – Jan 2019
Intern, Mechatronics and Intelligent Systems Research Lab, India
- The goal was to implement Exact and infrastructure free, low-cost indoor positioning system.
- Monocular visual odometry was performed on the indoor image data sets for localization, and content-based image retrieval(CBIR) is used for mapping of indoor mobile robots.
- The prototype was developed in MATLAB and then implemented with Python and OpenCV for easy training and testing purpose

MATLAB | Python3 | OpenCV | Visual Odometry

Jan 2018 – May 2018
Minor Project, Mechatronics and Intelligent Systems Research Lab, India
- Implemented path planning algorithms on a (2,0) mobile robot based on the ATmega2560 platform with preloaded maps of the environment and performed a comparative study of different path planning algorithms.

Arduino | C | Algorithms | Path planning

June 2017 – Sept 2017
Student Intern, Mechatronics and Intelligent Systems Research Lab, India
- The work was to develop an EMG based controller for controlling a custom made wheelchair.
- EMG signals were collected from Myo-band and classified using KNN and ANN classifiers for better performance evaluation.
- The work was implemented in Python using scikit-learn and Pandas.

MATLAB | KNN Classifier | Feature detection

Jan 2017 – May 2017
Thesis, Department of Electronics and Communication, Amrita University, India
- The objective of this work was to develop a Brain Computer Interface for controlling a custom made wheelchair from EEG signals on eye blinks.
- EEG signals were collected form Emotiv EPOC headset; features were extracted and classified using KNN classifier.
- The system was successfully implemented with an accuracy rate of 88

MATLAB | KNN classifier | Feature detection

Sept 2016 – Oct 2016
Minor Project, Department of Electronics and Communication, Amrita University, India
- The objective was to detect the presence of intruders in a parking area.
- Face detection was implemented for surveillance camera footage using Haar-cascade classification
- The classifier was trained using our data-sets to get the desired performance even in low lighting conditions.

MATLAB | Feature detection | Haar Classifier

Education

Feb 2019 Present	**Masters, University of Trento , Trento, Italy** › ERASMUS student at Department of Computer Science.
July 2017 Jan 2019	**Masters, Amrita Vishwa Vidyapeetham, Kollam, India** › Master of Technology in Robotics and Automation Engineering
June 2013 May 2017	**Bachelors, Amrita Vishwa Vidyapeetham, Kollam, India** › Bachelor of Technology in Electronics and Communication.

Competences

Expert user	MATLAB, Simulink ,OpenCV, and Machine Learning using Tensorflow.
Programming	**Python**, **C**,
Library	OpenCV, Pandas, Scikit-learn, Tensorflow, Keras.
Operating Systems	Windows, Linux and Raspbian.
Documentation	LaTeX, Microsoft Office suite.
Automation	Automation Studio, PLC and HMI.
Multimedia	Adobe Photoshop and Premiere Pro.
Tools	CAD tools, 3D printing, CNC

Internships and Workshops

Internet of Things workshop, Amrita University, India Feb 2016
Learned to interface the raspberry pi to android phone and then publishing sensor data to the cloud.

Implant intership and Training,Keltron, Trivandrum, Kerala. Dec 2015
Explored various equipment used in industries like power electronics systems, transformer winding, electroplating, security and surveillance systems.

Fourier to wavelets workshop, Amrita University, India. Oct 2015
The applications of Fourier transform and the concept of wavelets was demonstrated using MATLAB.

Linux based embedded systems and Internet of Things using Raspberry Pi workshop. Jan 2014
Learned to use Raspberry Pi for creating low cost embedded projects involving signal processing in the field of IOT.

References

Dr. Farid Melgani, Associate Professor
Dept. of Information Engineering and Computer Science, *University of Trento, Italy*
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Dr. Athi Narayanan, Assistant Professor
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