Sreelakshmi Gopakumaran Nair

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A graduate student who wanted to pursue a career in the field of Machine Learning and Computer vision. My areas of expertise includes.:

• **Machine Learning** • **Computer Vision** • **Deep Learning**

Education

University of Trento, Italy
ERASMUS student at Department of Computer Science. *2019-Present*

Amrita University, Amritapuri campus
Master of Technology in Robotics and Automation Engineering *2017-2019*

Amrita University, Amritapuri campus
Bachelor of Technology in Electronics and Communication *2013-2017*

Experience

Text to Image Synthesis using GAN
Guide: Dr Farid Melgani , Associate Professor, CSE Dept, University of Trento, Italy *Feb 2019 (ongoing)*

- Working on the Text to image synthesis using GAN approach in Remote Sensing.
- Currently working on the implementation of Generative Adversarial Network using Python3 and Tensorflow.

Image based Indoor Localization and Mapping
Guide: Dr Athi Narayanan, Assitant Professor, CSE Dept, Amrita University, India *June 2018-Jan 2019*

- Visual odometry is performed on the indoor image datasets that help in development of camera trajectory and later content based image retrieval is used along with visual odometry for localization and mapping of indoor mobile robots.
- Currently working with OpenCV and Python for visual odometry.

Implementation of A-star algorithm on mobile robot
Guide: Anjai Krishnan, Faculty Associate, Mechanical Dept, Amrita University, India *Jan - May 2018*

- Implemented A-star algorithm on a (2,0) mobile robot based on ATmega2560 platform with preloaded maps of the environment.

Development of EMG based controller .
Guide: Poorna SS , Assistant Professor, ECE Dept Amrita University, India *June - Sept 2017*

- EMG signals are collected from Myo-band for a specific time duration and the root mean square value is calculated for the classification purpose.
- This data set is then classified using KNN and compared with EEG signals for performance evaluation.

EEG based control application for a wheelchair using its spectral features with KNN classifier.
Guide: Poorna SS , Assistant Professor, ECE Dept Amrita University, India *Jan - May 2017*

- EEG signals collected form Emotiv EPOC headset is filtered, done principal component analysis(PCA) then smoothened and segmented to extract the useful data.
- This data is then classified using KNN and then Brain Computer Interface was developed to control a custom made wheel chair.

Face detection using haar-cascade in MATLAB for surveillance camera
Guide: Poorna SS , Assistant Professor, ECE Dept Amrita University, India *sept 2015*

- Implemented face detection from surveillance camera footage to detect the presence of intruders using haar-cascade classification in MATLAB
- The classifier was trained using thousands of negative and positive images to get the desired performance even in low lighting conditions.

Internships and Workshops

Internet of Things workshop
Amrita University, India. *Feb 2016*

- Interfacing the raspberry pi to android phone and then uploading 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, electro plating, security and surveillance systems.

From Fourier to wavelets and beyond.
Organized by IEEE, 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.
Amrita University, India. *Jan 2014*

- Learned to use Raspberry Pi for creating low cost embedded projects involving signal processing in the field of IOT.

Technical Strengths

- **Expert** user of MATLAB and Simulink , Machine Learning using Tensorflow.
- **Programming Languages:** Python, C++.
- **Library:**OpenCV, 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.

References

- **Dr. Farid Melgani, Associate Professor**
  Dept. of Information Engineering and Computer Science
  University of Trento, Italy
  `e-mail:melgani@disi.unitn.it`
- **Dr. Athi Narayanan, Assistant Professor**
  Department of Computer Science
  Amrita School of Engineering. Amrita Vishwa Vidyapeetham.
  `e-mail:athinarayanans@am.amrita.edu`
- **Dr. Balakrishnan Shankar, Associate Dean and Chairperson**
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  Amrita School of Engineering. Amrita Vishwa Vidyapeetham.
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