

Lakshmi Jayalal | Curriculum Vitae

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Education

Communications and Signal Processing

Indian Institute of Technology, Madras–Electrical Department

2019–Present

Doctor of Philosophy, PMRF Scholar

CGPA-8.86/10

Communications and Signal Processing

Indian Institute of Technology (ISM), Dhanbad – Electronics and Communications Engineering

2017–2019

Post Graduation

OGPA - 9/10

Bachelor of Technology

College of Engineering, Trivandrum – Electronics and Communications Engineering

2013–2017

OGPA - 7.98/10

Publications

Tuning-Free Online Robust Principal Component Analysis through Implicit Regularization

arxiv, Lakshmi Jayalal, Gokularam Muthukrishnan, Sheetal Kalyani

2024

SINR Analysis of an IRS Assisted MU-MISO System

arxiv, Lakshmi Jayalal, Shashank Shekhar, Athira Subhash, Sheetal Kalyani

2022

On the estimation of frequency residuals in a radio occultation experiment

Monthly Notices of the Royal Astronomical Society, Keshav R Tripathi, R K Choudhary, Lakshmi Jayalal 2022

A novel methodology for impact-based forecast

Weather and climate science for service partnership (WCSSP) India, VK et al.

2022

Exploring Power Signatures for Location Forensics of Media Recordings

ICASSP, Unnikrishnan et al.

SigPort
2016

Projects

Effect of introduction of IRS in communication channel

IIT Madras

Present

Study of implicit regularization and derive an algorithm to estimate the group sparse signals

IIT Madras

Present

Impact Based Weather Forecasting

2021

Digital signal processing of satellite radio signals

IIT(ISM) Dhanbad

2019

Quick Look Display

ISRO Space Physics Lab

2019

Collision warning system using Vehicle to Vehicle communication

Undergraduate Project

2016–2017

'Helios' Android Application

Undergraduate Project

2015

'Helios'-A smart table lamp

Undergraduate Project

2015

Developed a smart table lamp which has dual charging options (Electrical and Solar) and is Bluetooth controlled with a compact and an ergonomic design which can be used by hikers, and emergency team.

Robotics club of College of Engineering Trivandrum

RoboCET

2013-2017

Designed and developed various projects under the aegis of RoboCET like Propeller Clock, Magic Wand, Dancing LEDs, White Line Follower

Achievements

Prime Ministers Research Fellowship

IIT Madras

Fellowship

2021-Present

One of the recipients of the prestigious Prime ministers research fellowship for the year 2021-2023

IEEE College of Engineering Trivandrum

Student Branch

Best Student Volunteer

2017

Was awarded the best student volunteer for the year 2017 for the membership drive conducted which resulted in enormous turnout for students that year. The student branch received the best student branch award the same year.

Grace Hopper Celebrations India

AnitaB.org

GHCI Student Scholar

2016

Was selected as one of the 14 GHCI scholars selected from all around the country. And was provided with a once in a lifetime opportunity to attend the GHCI Conference. (2016)

Competition: Circuit Casino

TechnaDruva'16

First Position

2016

Different waveforms were asked to be generated by designing an electric circuit.

Experience

Teaching and Graduate Research Assistant

IIT Madras

Ph.D.

2019-Present

Have been a teaching and research assistant at IIT Madras. The courses assisted are

1. Introduction to programming (Python)
2. Applied programming lab
3. Introduction to probability
4. Estimation theory
5. Digital modulation and coding
6. Introduction to machine learning

Core Executive Member

IIT Madras

Research Connect

2021-2022

Coordinator

IIT Madras

Research Connect

2020-2021

Coordinator (Website Design Team)

IIT Madras

Research Scholars Day 2021

2021

Was responsible for maintaining the website for Research Scholars Day 2021

ISRO Space Physics Lab

VSSC

Intern, Signal Processing of data from Radio Science experiments

2018-2019

IEEE College of Engineering, Trivandrum

Student Branch

Treasurer

2016-2017

Certifications

Issued Jul 2021

NVIDIA

Credential ID b2a4fdb25ade47d0ae85f194b191ef4f

Fundamentals of Deep LearningFundamentals of Deep Learning

Issued Jul 2021

Coursera

Credential ID 6RPNMLN3DD8U

Getting Started with AWS Machine Learning

Technical Skills

IDL, MATLAB, MATHEMATICA, PYTHON, PyTorch, Machine learning, Estimation Theory, Compressed Sensing