

GAUTHAM KRISHNA GUDUR

Research Assistant

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EXPERIENCE

Research Assistant

Solarillion Foundation

Feb 2016 – Ongoing

Chennai, India

- Led a team of four to develop a Human Activity Recognition system robust to mobile-sensing heterogeneities using Deep Learning.
- Developing a real-time Occupancy Prediction engine for a show in collaboration with one of the top 3 movie multiplex chains in India.
- Led a team of five and worked on a Dynamic Gesture Recognition system using accelerometers with Machine Learning approaches.

Teaching Assistant

Solarillion Foundation

Jan 2017 – Ongoing

Chennai, India

- Mentored students by helping them develop their approach towards problem-solving and taught them fundamental concepts in programming and embedded systems.

Undergraduate Student Researcher

SSN College of Engineering

Feb 2015 – Mar 2017

Chennai, India

- Worked on a funded HCI research project of Neurocinematics, where real-time cognitive responses of film viewers are captured using EEG.
- Worked on choosing the best-suited mote for two IoT scenarios, by analyzing their RPL performance metrics on a Contiki testbed.

PUBLICATIONS

Conferences

- "A Generic Multi-modal Dynamic Gesture Recognition System using Machine Learning." Accepted at IEEE Future of Information and Communication Conference (FICC 2018), Singapore.
- "Electroencephalography Based Analysis of Emotions Among Indian Film Viewers." Presented at International Conference on Advanced Informatics for Computing Research (ICAICR 2017), Springer.
- "Analysis of Routing Protocol for Low-power and Lossy Networks in IoT Real Time Applications." Presented at 4th International Conference on Recent Trends in Computer Science & Engineering (ICRTCSE 2016), Procedia Computer Science, Elsevier.

Poster

- "Neurocinematics: The Intelligent Review System." Presented at 3rd International Conference on Cognition, Brain and Computation (CBC 2015), IIT Gandhinagar.

EDUCATION

B.Tech in Information Technology

Anna University

(SSN College of Engineering)

Grad. Apr 2017

Chennai, India

Cum. GPA: 7.41/10 - First Class

HSC (Class XII)

DAV Higher Secondary School, Gill Nagar

Grad. May 2013

Chennai, India

Scored an overall of 94.25%

AISSE (Class X)

SBOA School & Junior College

Grad. May 2011

Chennai, India

Cum. GPA: 10/10

SKILLS

Programming

Expert Python C C++

Intermediate R Java HTML/CSS

JavaScript PHP Bash

Basic Android Golang SQL

Hardware & Software

Arduino Raspberry Pi NAS LaTeX

Linux (Ubuntu) Contiki OS Octave

Git Microsoft Office Suite

Tools & Frameworks

Numpy Scipy Pandas Keras

PyTorch Scikit-Learn TensorFlow

Flask AWS

AREAS OF INTEREST

Machine/Deep Learning IoT

Computer Vision Gesture Recognition

Activity Recognition NLP

NOTABLE PROJECTS

Movie Occupancy Prediction Engine

Solarillion Foundation

📅 Sep 2017 – Ongoing

Tools & Framework: Python | Pandas | MS-SQL | Scikit-Learn | PyTorch

Extracted nearly 10 TB of transactional data (over past 5 years) using AWS, structured them using MS-SQL & extracted behavioral features to forecast show occupancy of a movie. Currently working on deploying an application into production.

Intelligent Bus Stop Recognition System

Undergraduate Thesis, SSN College of Engineering

📅 Jan 2017 – Apr 2017

Language & Platform: Python | Numpy | Anaconda | RaspberryPi Zero

Developed a recognition engine on a RaspberryPi Zero platform that automatically identifies bus stops using images acquired from cameras placed on a bus using a hybrid nearest-neighbor classifier.

Gest-Face

Personal Project

📅 April 2017

Language & Framework: Python | OpenCV | HaarCascade | PyQt5

Developed a Gesture/Facial recognition system that can recognize gestures, as well as detect the number of faces of users in real-time. The system was rendered as an application using PyQt5.

Deep Learning Projects

Online Coursework & Kaggle

📅 May 2017 – Ongoing

Language & Framework: Python | Numpy | PyTorch | Tensorflow

- Deep Dream and Image Captioning with CNN, RNN using LSTM.
- Grasp-and-Lift EEG Detection from Kaggle (HCI)
- Street View House Numbers from Google (CV)
- notMNIST (CV)

Real-Time Sentiment Analyzer of Twitter Trends

Personal Project

📅 Dec 2016

Language & Framework: Python | NLTK | Scikit-Learn | Tweepy | PyQt5

Implemented an application that gives the live Twitter trend graph of a tweet using an ensemble voting and a TextBlob classifier. The real-time mood (pos/neg) of the scraped tweets is presented to the user.

Speed Control of DC Motor using Arduino

Solarillion Foundation

📅 Feb 2016

Platform & Hardware: AtMega328 | 12V DC Motor | IR Sensor

Devised a feedback based algorithm using Proportional controller to automatically self-stabilize the error between Reference speed and Measured speed (± 4 RPM) of a 12V DC Motor with external load.

COURSEWORK

Undergraduate

- Programming & Data Structures: I & II
- Operating Systems
- Database Management Systems
- Design & Analysis of Algorithms
- Artificial Intelligence
- Compiler Design
- Data Warehousing & Data Mining
- Grid & Cloud Computing
- Data Analytics

Online Certifications (MOOCs)

- **University of Washington | Coursera**

Machine Learning Specialization (4 courses)

A Case Study Approach Regression

Classification Clustering & Retrieval

- **Stanford University | Coursera**

Machine Learning

- **UC-San Diego | Coursera**

Algorithmic Toolbox Data Structures

- **John Hopkins University | Coursera**

R Programming

ACHIEVEMENTS

Scholastic

- 97th percentile in HackerRank (Algorithms Domain)
- Undergraduate **Financial Research Grant of INR 24,000** by College Management
- Certification of Merit for Grade A1 in all subjects in AISSE
- Top 10 percentile in 42nd National Mathematics Talent Competitions
- 86th percentile in 13th National Science Olympiad (NSO)

Non-Scholastic

- Division/State Badminton Player (Under-19)
- Event Organizer of "Data Nuggets" - a Data Science event, Invente2k16
- Completed all 10 levels of UCMAS Mental Arithmetic (Abacus)
- 29th Rank overall in Grade 3 Keyboard