GAUTHAM KRISHNA GUDUR

Research Assistant

@ gauthamkrishna.gudur@gmail.com | +91 969.814.1161 | Chennai, INDIA | gauthamkrishna-g.github.io
in linkedin.com/in/gauthamkrishna-g | github.com/gauthamkrishna-g | </> hackerrank.com/gauthamkrishna_g

EXPERIENCE

Research Assistant

Solarillion Foundation

Feb 2016 – Ongoing | Chennai, India

- Leading 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

- **"HARNet: Towards On-Device Incremental Learning using Deep Ensembles on Constrained Devices."** Submitted at 2nd International Workshop on Embedded and Mobile Deep Learning (Co-located with ACM MobiSys 2018).
- **"A Generic Multi-modal Dynamic Gesture Recognition System using Machine Learning."** Presented 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 | SQL

Hardware & Software

Arduino | Raspberry Pi | LaTeX | Linux (Ubuntu) | Contiki OS | Octave | Git | Microsoft Office Suite

Tools & Frameworks

Numpy | Scipy | Pandas | Keras | PyTorch | Scikit-Learn | TensorFlow | Flask | Weka | AWS

AREAS OF INTEREST

Machine/Deep Learning | IoT | Activity Recognition | Computer Vision | Gesture Recognition | NLP | Cognitive Computing

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 Raspberry Pi Zero platform that automatically identifies bus stops using images (dataset) 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

- Completed Stanford's graduate Deep Learning course CS231n: Convolutional Neural Networks for Visual Recognition, Udacity Deep Learning.
- Datasets used:
  - CIFAR-10 (CV)
  - notMNIST (CV)
  - Street View House Numbers (CV)
  - Text8 - Wikipedia (NLP)

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 with Feedback

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