GAUTHAM KRISHNA G

Research Assistant

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EXPERIENCE

Research Assistant
Solarillion Foundation
Feb 2016 – Ongoing | Chennai, India

- Developing a real-time Occupancy Prediction system for a show in collaboration with one of the top 3 movie multiplex chains in India.
- Currently working on a personalized Food Recommendation system with dietary restrictions using Deep Learning.
- 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."** Advanced Informatics for Computing Research. Springer, Singapore, 2017. 145-155.
- **"Analysis of Routing Protocol for Low-power and Lossy Networks in IoT Real Time Applications."** Procedia Computer Science 87, Elsevier (2016): 270-274.

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 (Absolute Grading): 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 | Weka | Scikit-Learn | PyTorch | Tensorflow | Django | AWS

AREAS OF INTEREST

Machine Learning | IoT | NLP | Computer Vision | Gesture Recognition | Cognitive Computing

NOTABLE PROJECTS

Movie Occupancy Prediction Engine

Solarillion Foundation

Sep 2017 – Ongoing

Tools & Framework: Python | Numpy | AWS | 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