GAUTHAM KRISHNA GUDUR

@ gauthamkrishna.gudur@gmail.com | +91 969.814.1161 | 12-May-1996 | linkedin.com/in/gauthamkrishna-g
Chennai, India | gauthamkrishna-g.github.io | github.com/gauthamkrishna-g | </> hackerrank.com/gauthamkrishna_g

EXPERIENCE

Data Scientist
ERICSSON

Feb 2019 – Ongoing | Chennai, India

- Currently a part of Global AI Accelerator (GAIA) - Ericsson R&D, broadly working on solving problems in telecom and IoT using Machine Learning for various mobile and broadband service providers.
- Working on multiple projects pertaining to time-series anomaly detection, red-cell detection during busy hours, failure prediction of Mean Time to Connect (MTTC), mute call detection, etc.

Machine Learning Engineer
SMARTCARDIA (EPFL)

May 2018 – Nov 2018 | Chennai, India

- Developed insightful **machine learning, deep learning models** for analyzing **biomarkers** like Sleep apnea, Troponin, Hemoglobin, Blood Pressure & Glucose, to provide unique insights into patients' health.
- Engineered features for imbalanced time-series clinical data, and modeled classification & regression architectures using **ensembled tree-based** algorithms and **Recurrent neural networks (LSTMs)**.

Research & Teaching Assistant
SOLARILLION FOUNDATION

Feb 2016 – June 2018 | Chennai, India

- Co-led a team of four to develop **Deep Learning** ensemble models for **Human Activity Recognition (HAR)** system on constrained devices.
- Developed a real-time **Occupancy Prediction engine** for a movie in collaboration with one of the **top 3 Indian movie multiplex chains**.
- Led a team of five and worked on a **Dynamic Gesture Recognition** system using accelerometers with Machine Learning approaches.
- Mentored students by helping them develop their problem-solving approaches in programming & 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/Workshops

- Gautham Krishna Gudur, Prahalathan Sundaramoorthy, Venkatesh Umaashankar, **"ActiveHARNet: Towards On-Device Deep Bayesian Active Learning for Human Activity Recognition"**, 3rd International Workshop on Embedded and Mobile Deep Learning (EMDL '19), ACM MobiSys 2019.

RESEARCH INTERESTS

Applied Machine Learning/Deep Learning | Ubiquitous/Wearable Computing | Activity Recognition | On-Device ML | Bayesian ML | Active Learning | HCI | Time-series Analysis | Computer Vision | NLP | IoT | Healthcare Informatics

SKILLS

Programming

Expert Python | C/C++
Intermediate Java | SQL | HTML/CSS | JavaScript | Bash
Basic Android | R | Octave

Hardware & Software

Arduino | Raspberry Pi | LaTeX | Git | Linux | Windows

Tools & Frameworks

NumPy | Pandas | TensorFlow | Keras | Scikit-learn | PyTorch | OpenCV | NLTK | PySpark | Flask | Weka | AWS

EDUCATION

B.Tech in Information Technology
Anna University

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%

REFEREES

Dr. Srinivasan Murali - CEO, SmartCardia, EPFL
Dr. Arjuna Sathiaseelan - Ex Director, N4D Lab, University of Cambridge
Vineeth Vijayaraghavan - Director, Solarillion Foundation
Prof. Srinivasan R - Professor, SSN College of Engineering

- Prahalathan Sundaramoorthy, **Gautham Krishna Gudur**, Manav Rajiv Moorthy, R Nidhi Bhandari, Vineeth Vijayaraghavan, **"HARNet: Towards On-Device Incremental Learning using Deep Ensembles on Constrained Devices"**, 2nd International Workshop on Embedded and Mobile Deep Learning (EMDL '18), ACM MobiSys 2018.
- **Gautham Krishna G**, Karthik Subramanian Nathan, Yogesh Kumar B, Ankith A Prabhu, Ajay Kannan, Vineeth Vijayaraghavan, **"A Generic Multi-modal Dynamic Gesture Recognition System Using Machine Learning"**, Future of Information and Communication Conference (IEEE FICC 2018).
- **Gautham Krishna G**, Krishna G, Bhalaji N, **"Electroencephalography Based Analysis of Emotions Among Indian Film Viewers"**, Advanced Informatics for Computing Research, Springer, ICAICR 2017.
- **G Gautham Krishna**, G Krishna, N Bhalaji, **"Analysis of Routing Protocol for Low-power and Lossy Networks in IoT Real Time Applications"**, Procedia Computer Science, Elsevier, ICRTCSE 2016.

Poster/Extended Abstract

- N Bhalaji, G Krishna, **G Gautham Krishna**, **"Neurocinematics: The Intelligent Review System."**, 3rd International Conference on Cognition, Brain and Computation (CBC 2015), Indian Institute of Technology (IIT), Gandhinagar.
- **Gautham Krishna Gudur**, Prahalathan Sundaramoorthy, Venkatesh Umaashankar **"Handling Real-time Unlabeled Data in Activity Recognition using Deep Bayesian Active Learning and Data Programming"**, MobiUK 2019, University of Oxford.

NOTABLE PROJECTS

Intelligent Bus Stop Recognition System

Undergraduate Thesis, SSN College of Engineering

Jan 2017 – Apr 2017

Tools & Framework: Python | Numpy | TensorFlow | Raspberry Pi
Developed an embedded vision-based bus stop recognition engine, using **ConvNets** & **hybrid nearest-neighbor** classifiers. **Data augmentation** and **Incremental Bayesian Active Learning** strategies were simulated for bus-stop scalability.

Movie Occupancy Prediction Engine

Solarillion Foundation

Sep 2017 – Mar 2018

Tools & Framework: Python | Pandas | MS-SQL | scikit-learn | Keras
Dealt with terabytes of transactional data (~5 years), structured them and extracted behavioral features to forecast the movie occupancy (± 6 MAPE) using statistical **time-series algorithms** and **Recurrent Neural Nets**. Deployed the beta application into production.

Label Generation using Snorkel: Currently working on **Snorkel** - a data programming paradigm, to extend ground truth generation to other areas like time-series, using specialized labeling & generative modules.

Active Learning & handling Incremental Data Imbalance: Currently working on **Bayesian active learning** strategies and utilizing data augmentation in image & sensor data, thereby **handling class data imbalance** during incremental learning.

Gest-Face: Developed a Gesture & Facial recognition application using **OpenCV** and **PyQt5**, that can accurately recognize simple hand gestures, as well as detect faces of users in real-time.

Real-Time Sentiment Analyzer of Twitter Trends: Implemented an application using **NLTK** and **scikit-learn** to graph the real-time Twitter mood trend (pos/neg) using **ensemble voting** and **TextBlob classifier**.

COURSEWORK

Undergraduate

- Programming & Data Structures: I & II
- Operating Systems
- Database Management Systems
- Design & Analysis of Algorithms
- Artificial Intelligence
- Compiler Design
- Data Warehousing & Data Mining
- 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
- **Google | Udacity** - Deep Learning
- **Stanford University** - CS231n
- **fastai** - fastai

HONORS & AWARDS

Scholastic

- **97th percentile in HackerRank (Algorithms Domain)**
- Technical Reviewer of the book titled "**Hands-On Meta Learning With Python**."
- 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

Non-Scholastic

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