

ABHIJITH RAGAV

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EDUCATION

Georgia Institute of Technology

Aug 2021 – Dec 2022 (expected)

Master of Science in Computer Science

Courses: Machine Learning, Artificial Intelligence, Big Data Systems & Analytics, Qualitative HCI

SRM Institute of Science and Technology

Jul 2016 – Jun 2020

Bachelor of Technology in Information Technology

Relevant Courses: Data Structures & Algorithms, Operating Systems, Database Management Systems, Computer Networks, Probability & Statistics, Object Oriented Analysis and Design, Data Mining

EXPERIENCE

Carnegie Mellon University

Pittsburgh, PA

Research Assistant (Synergy Labs)

Jan 2020 – Mar 2021

- Built AppService, an infrastructure to host and run IoT apps in discrete LXC containers with dynamic resource allocation.
- Designed several REST APIs for external systems to deploy, manage and interact with third-party apps on AppService.
- Interfaced AppService with Building Depot, a Smart-Building OS to interact with 500+ sensors across CMU campus.
- Worked on a privacy wrapper that restricts third party API calls in an app, and enforces User Access Control.
- Developed IoT apps that use Machine Learning to make real-time inference on sensor data with minimal overhead.

Solarillion Foundation

Chennai, India

Undergraduate Research & Teaching Assistant, Server Administrator

April 2018 – May 2020

- Proposed a scalable Deep Learning solution for stress detection on edge devices, and achieved an accuracy of 95.39% - Absolute increase of 10% over the benchmark and an 18x reduction in inference times on a Raspberry Pi 3.
- Led a team of 4, and worked with real-world theatre occupancy data to build a two-stage model that predicts the number of weeks a movie is expected to screen based on behavioral population analysis. Solution used by a top multiplex in India.
- Mentored 20+ students in research and open-source, formulated assignments in Python & ML.
- Administered a compute server and set up a NAS for Machine Learning and IoT research.

Indian Institute of Technology, Madras

Chennai, India


Machine Learning Intern (RISE Lab)

May 2019 – Jul 2019

- Ported TensorFlow Lite bare metal on the Risc-V **Shakthi** E-Class microprocessor.

SELECTED PROJECTS

TARS: Workplace Automation and Compute Server Management

 [Code](#) Dec 2019 – May 2020

- Automated workflow by writing bots for auto-grading assignments, posting office hours, and tracking student status. The bot was extensively used by 100+ students and Teaching Assistants.
- Developed using Flask and deployed on Heroku servers.

Transfer Learning for International Crisis Response

 [Code](#) Jan 2020

- Used RoBERTa to transfer knowledge across organizations to improve the classification effectiveness for organizations with a smaller amount of available training data. Among the top 5 submissions at the challenge held as part of AMLD 2020.

Pollen Grain Classification

 [Code](#) May 2020 – Jun 2020

- Implemented a two-stage model using U-Net (segmentation) and VGG-16 (classification) to classify pollen grain images.
- ★ Presented at the ICPR 2020 Challenge Workshop.

SELECTED PUBLICATIONS

1. *Bayesian Active Learning for Wearable Stress and Affect Detection*

Poster at **NeurIPS Workshop on Machine Learning for Mobile Health (ML4MH)** 2020

2. *Scalable Deep Learning for Stress and Affect Detection on Resource-Constrained Devices*

 [Slides](#)  [Code](#)

18th IEEE International Conference on Machine Learning and Applications (ICMLA) 2019, Florida, USA

3. *A Two-Stage Machine Learning Approach to Forecast the Lifetime of Movies in a Multiplex*

 [Code](#)

Future of Information and Communication Conference (FICC) 2020, San Francisco, USA

SKILLS

Languages: Python, C, C++, SQL, Bash, Javascript, \LaTeX

Frameworks and Libraries: PyTorch, TensorFlow, Git, scikit-learn, NumPy, Pandas, Keras, OpenCV, Flask, AWS, GCP, Docker, Heroku, MongoDB, Hadoop, Anaconda, REST APIs, HTML, CSS

Additional Skills: Server Administration

ACHIEVEMENTS AND EXTRA-CURRICULARS

- Submission ranked in top 3% in the Spotify Sequential Skip Prediction challenge conducted by Spotify and AICrowd.
- Best project award at SRM ICIOT 2019.
- Led the blogging team at SRM Alumni association.