

# Sai Yerramreddy

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## EDUCATION

- **University of Maryland** College Park, USA  
*PhD in Computer Science; Advisor: Dr. Adam Porter* Jan 2022 - Current
- **University of Maryland** College Park, USA  
*Master of Science in Computer Science; GPA: 3.89* Aug 2019 - Dec 2021
- **Sardar Patel Institute of Technology** Mumbai, India  
*Bachelor of Engineering in Computer Engineering; GPA: 9.37/10* July 2015 - May 2019

## PUBLICATIONS

- **An Empirical Assessment of Machine Learning Approaches for Triaging Reports of Static Analysis Tools:** S. Yerramreddy\*, A. Mordahl\*, U. Koc, S. Wei, J. Foster, M. Carpuat, A. Porter; *Empirical Software Engineering*
- **Demonstration of VegaPlus: Optimizing Declarative Visualization Languages:** J. Yang, H.K. Joo, S. Yerramreddy, S. Li, D. Moritz, L. Battle; *SIGMOD 2022 Demo*
- **Metamorphic Adversarial Detection Pipeline for Face Recognition Systems:** R.R. Mekala, S. Yerramreddy, A. Porter; *AAAI AdvML Workshop 2022*
- **Automated Facial Recognition Attendance System Leveraging IoT Cameras:** R. Dmello, S. Yerramreddy, S. Basu, T. Bhitle, Y. Kokate, P. Gharpure; *Confluence 2019*
- **Genetic Algorithm for Optimal Feature Vector Selection in Facial Recognition:** S. Yerramreddy, KTV Talele, Y. Kokate; *I2CT 2019*
- **Harmonic oscillator: A classical fundamental building block:** R.R. Sawant, M. Chauhan, S. Yerramreddy, Y.S. Rao; *National Power Electronics Conference 2017*

## EXPERIENCE

- **National Institute of Standards and Technology** Gaithersburg, USA  
*PREP Researcher* Jan 2023 - Current
  - **Interpretability Research:** Working on developing a pipeline for classifying and interpreting physics inspired vision data.
- **University of Maryland (Fraunhofer USA CMA)** College Park, USA  
*Graduate Research Assistant (Grants: Northrop Grumman, National Science Foundation)* Feb 2020 - Current
  - **FLORIDA:** Developed a metamorphic adversarial detection pipeline for face recognition systems.
  - **Independent Research with Dr. Shiyi Wei:** Conducted an empirical study of machine learning algorithms (Bag of Words, LSTM, and GNN) to detect false positive reports being generated by static analysis tools.
  - **STAR:** Developing an automated tool for systematic testing of computer vision systems.
  - **SeqScreen & Metacompass:** Working on a testing suite and data generation framework for AI based metagenomics software.
- **Ugam Solutions Pvt. Ltd.** Bangalore, India  
*Consultant Intern* May 2018 - Jul 2018
  - **Smart Retail Annotation Tool:** Built a smart retail algorithm to detect SKUs on grocery aisles. Also developed an automated annotation tool using Flask and Angular.js for generating brief analytical reports based on the detection.

## TECHNICAL SKILLS

- **Frameworks:** PyTorch, TensorFlow, OpenCV, Scikit, Keras, Django, Flask, NodeJS, Hadoop, D3.js
- **Tools:** Docker, Conda, Git, Android, Tableau, CI/CD, Firebase, Power BI, Linux
- **Languages:** Python, C, JavaScript/TypeScript, Java, MATLAB, Kotlin, SQL

## PROJECTS

- **VegaPlus:** Developing a system to optimize visualization execution plans made from declarative specifications by offloading computational-intensive operations to a separate database management system. Advised by Dr. Battle and Dr. Moritz
- **ForeCache:** Developed an algorithm to use user navigation path prediction for data prefetching in visualization systems. Advised by Dr. Battle
- **PhonemeLive & VoidNet:** Developed 2 Human liveness detection systems utilizing frequency-dependent spectral power characteristics, phoneme feature extraction and doppler shift effect caused by mouth movements of a live user.
- **One Perturbation to Attack Them All:** Performed a study to understand how creating adversarial examples for input images based on a single task would affect other independent tasks with the same input images.
- **Undergraduate Final Year Thesis:** Developed a multi-stage single modal systems to recognize primary emotions, secondary emotions & sarcasm

## POSITION OF RESPONSIBILITY

- **Head Teaching Assistant for CMSC436: Programming Handheld Systems (Class of 150) at UMD:** Developed labs and testing suites. Organized schedule for other TAs. Proctored and graded midterms and finals. (*Fall 19, Spring 22, Fall 22*)
- **Technical Advisor for the BigTh!nk AI club at UMD:** Advised the club on weekly activities, assisted the club with technical projects. (*Fall 20, Spring 21*)
- **Teaching Assistant for Programming Methodology & Data Structures at S.P.I.T:** Conducted lectures, lab sessions and also helped students with their academic projects and coding activities. (*Fall 18, Spring 19*)