ADVIKAA RAMESH

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PROFILE

"Graduate student in Computer Science and Engineering at The Ohio State University, specializing in medical imaging and machine learning. Experienced in developing deep learning models and optimization techniques for applications in computational imaging, neuroscience, and healthcare. Strong background in data science, predictive modeling, and interdisciplinary research, with excellent coding skills in Python. Passionate about advancing AI-driven solutions for medical diagnostics and imaging sciences. Skilled at collaborative development, scientific communication, and translating complex technical ideas into real-world impact."

EDUCATION

The Ohio State University, Columbus, OH - *Masters of Science, Computer Science and Engineering* 2024-Present
SRM Institute of Science and Technology, Madras, India- *Bachelor of Technology, Computer Science and Engineering(spec. in AI and ML)* 2020-2024
Indian Institute of Technology, Madras, India- *Dual Diploma in Data Science and Programming* 2021-2024

SKILLS

Programming Languages: Python, C, C++, Java, Swift, JavaScript, R
AI & Deep Learning: PyTorch, TensorFlow, Keras, OpenCV, Scikit-learn, YOLO, CNNs, ResNet, DenseNet, Inception, Predictive modeling, supervised/unsupervised learning
Data Science & Analysis: NumPy, SciPy, Pandas, Seaborn, AstroML, MATLAB, JSON, Jupyter Notebooks, Google Colab
Generative AI: GPT-4 (OpenAI API), prompt engineering, HuggingFace Transformers, LLM integration in Python
Optimization Techniques: Familiar with optimization algorithms for improving model performance and decision-making (e.g., gradient descent, evolutionary algorithms, hyperparameter tuning).
Libraries & Frameworks: TensorFlow, Keras, PyTorch, Scikit-learn, OpenCV, LangChain, Transformers, Pandas, NumPy, Seaborn, SciPy, AstroML, CreateML
Natural Language Processing: Coursework in NLP (undergraduate and graduate level), currently working on NLP-based graduate class research project.
Engineering & Computational Tools: SolidWorks, Onshape, Excel, Jupyter Notebook, Google Colab, Bash (Command Line), Docker
GPU & Performance Optimization: CUDA, GPU Acceleration
Techniques: Data analysis, machine learning, deep learning, model development, image classification
Software & Productivity: Microsoft Office, iWork, Figma, Sketch, Tableau, Figma
Soft Skills: Time Management, Critical Thinking, Teamwork, Public Speaking, Problem Solving, Adaptability, Data-Driven Decision Making

RESEARCH AND TEACHING EXPERIENCE

Graduate Researcher Oct 2024 – Present
Biomedical Imaging, The Ohio State University

- Currently conducting research in **Dr. Wei-Lun (Harry) Chao's Machine Learning Laboratory** at **The Ohio State University**, focusing on **Imageomics and Medical Imaging**. Co-author of a research paper submitted to CVPR 2025, ICCV 2025 showcasing ability to contribute to top-tier AI research venues.
- Conducting master's thesis research in **medical imaging and neuroscience** at **Dr. Golrokh Mirzaei's Laboratory, The Ohio State University**, focusing on advanced neuroimaging techniques and their applications in neurological studies.

NLP Research Project – Long-Range Context Modeling Analysis Feb 2025 – Apr 2025
Course Research Project, The Ohio State University

- Investigating the ability of models to capture **long-range context in NLP** through next-token prediction and QA.
- Comparing performance of **Transformer-based models and XLSTMs** on extended sequence inputs.

Apple iOS Bootcamp Mentor Oct 2023 – Mar 2024
Mentor, (Apple & Infosys Funded)

- Mentored students on iOS app development using Swift and ML integration; conducted sessions on soft skills, UX, business skills and communication.

Teaching Assistant
Business Analytics, IIT Madras

- Selected for instructional support role in Business Analytics course involving data analysis and causal inference. (Unable to assume role due to college restrictions)

INTERNSHIPS

SPARTIFICIAL, India Oct 2023 – Jan 2024
Research Intern

- Developed an AI model to classify gravitational wave glitches (Inception v3, ResNet, DenseNet), contributing to computational astrophysics research.

INFOSYS, India Apr 2023-May 2023
iOS Intern

- Created a hospital management application using iOS centric technologies.

SIGNIFICANT PROJECTS

BEAM Jan 2023- Dec 2023

- An iOS application focusing on mental wellbeing, by utilising machine learning technologies. Developed using Swift, CreateML, UIKit.
- Prototype was presented to the Apple Senior Leadership Team based in Cupertino.

DETECTION OF GRAVITATIONAL WAVE GLITCHES Oct 2023 – Jan 2024

- Applied predictive machine learning models (Inception v3, ResNet, DenseNet) for classification of gravitational wave glitches, contributing to practical scientific decision-making processes.

ACCIVISION Dec 2023- May 2024

- Developed an **AI-powered accident detection system** leveraging **computer vision and optimization algorithms** to analyze **real-time CCTV footage**. Implemented **data-driven insights** to enhance detection speed and accuracy. IEEE research paper accepted.
- Integrated OpenCV and PyTorch for object tracking. Leveraged optimization algorithms to enhance real-time accident detection speed and accuracy from CCTV footage.

BIBLIOTECH June 2024- July 2024

- A library management system accessible by both the librarian and reader. Uses Vue js CLI, Flask, RESTful API and SQLAlchemy.

NSFW DETECTION June 2023- Aug 2023

- Detecting and filtering out inappropriate content in videos in real time. Developed using YOLO, LabelImg, Deep Learning, Audio Recognition.

IZIVOT Apr 2023- May 2023

- A hospital management system using iOS technologies. Contains separate interfaces for Admin, Patient and Doctor.

PNEUMONIA DETECTION USING X-RAY IMAGES Mar 2023- Apr 2023

- Developed an accurate system for detecting pneumonia using X-Ray images by using Deep Learning Techniques and CNN. Demonstrated understanding of biomedical image pipelines applicable to histopathology tasks.

CAPSTONE PROJECT Dec 2022- Dec 2022

- A capstone project focused on improving a generating a profit for the RK Supermarket, located in Chennai. Included doing an in-depth analysis of their data over the past 2 years and discovering 3 business problems. Provided my personal recommendations for the same.

AFFILIATIONS

GOOGLE DEVELOPER STUDENT CLUBS (officially associated with Google) 2021 - 2023

Corporate Member

- Responsibilities included Outreach, Acquiring Sponsorships, Marketing, EMCEE at official club events.

ALEXA DEVELOPERS SRM (officially associated with Amazon Alexa)

2020 - 2024

Head of Creatives Domain

- Responsibilities included Outreach, Marketing, Event and Workshop Organisation, Managing the entire Creatives Domain and part of the Core Team

IOT ALLIANCE 2020 - 2024

Corporate Executive

- Responsibilities included Outreach, Acquiring Sponsorships, Marketing, Event Management and Planning

HONORS AND AWARDS

- Awarded the **OCWIC** (Ohio Celebration of Women in Computing) Scholarship by The Ohio State University.
- Mental Health Application (Beam) Selected for the prestigious **Apple/Infosys iOS Bootcamp (2022-2023)**, chosen from thousands of applicants.
- **Showcased Beam to Apple Senior Leadership** Team in Cupertino, as one of only four applications selected from hundreds for presentation.
- Selected as the **only student speaker globally** to present at the Apple Education Summit, representing India among a distinguished audience of global education leaders.
- Selected as an ambassador for the **International Astronomy and Astrophysics Competition**, representing a global initiative to promote astronomy and astrophysics education.
- Chosen as a mentee in the **UNOOSA Space for Women Program**, a prestigious global initiative by the United Nations to support women in space exploration and STEM fields.
- National Level Swimmer and Medallist