NIKHIL RAMESH

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EDUCATION

Master of Science, Expected May 2022
University at Buffalo, The State University of New York
- Major in Computer Science and Engineering. GPA : 3.5 / 4.0.

Bachelor of Technology, May 2019
PSG College of Technology
- Bachelors in Information Technology. GPA : 3.7 / 4.0.

PROGRAMMING SKILLS

- Languages: Python, C++, Java, Html, JavaScript, PHP, SQL.
- Technologies: PyTorch, Numpy, OpenCv, Docker, Git, Commandline, Springboot, Hibernate,MATLAB,Microsoft Office Suite.

EXPERIENCE

Teaching Assistant, University at Buffalo, January 2022 - Present
- Teaching Assistant for CSE 610 – Special Topics, Automated Analysis of Sporting Event Videos.
- Guiding students on projects to related to SoccerNet 2022 competition featured at CVPR'22.

Research Assistant, A2IL Lab, University at Buffalo, May 2021 - Present
- Automated Analysis of Sporting Event Videos: Analysis of different sporting event videos, including American FootBall, Soccer games. Analyzing is done using Computer Vision and Statistical Learning.
- Federated Learning: Enhanced distillation-based FL framework to preserves privacy by design. The system consumes approximately 10 percent less network communication resources as compared to current state-of-the-art.

Software Engineer, Taurus Hard Soft Solutions, Bangalore, India, January 2020 - December 2020
- ARCA: Designed an advanced Rail Controls Automation Software deals with Inventory Management System to account and track whole inventory flow of railway equipment.Increased efficiency of system by 50 percent from previous method.
- Web Applications: Developed web applications for nomination platforms and enabled dynamic timetable scheduling for educational institutions leveraging FET. Worked on integration of payment gateway for Datafast for an ecommerce website.

Research Intern, Indian Institute of Science, Bangalore, India, December 2018 - April 2019
- Tumor Detection: Outperformed UNet Model for Segmentation of Malignant Lesions found on Digital Mammograms leveraging preprocessing images with CLAHE method and adding Conditional Random Field to model with channel attention and deep supervision for faster convergence. Got 2 percent performance than state of art models with while having less trainable parameters.

PROJECTS

- PyTorch Nano: Created a toy deep learning framework only using the Numpy library in python. Executed Layers, Activation Functions, Loss Functions and Metrics.
- Recognition and Retrieval: Designed an object recognition and retrieval systems. Implemented classification system and image retrieval problem using convolutional neural networks.
- Pub/Sub System: Implemented pub/sub system where functions of central server need to be handled by Rendezvous algorithm and Kafka. Using multiple publishers and subscribers. Dockerized application as well.
- Template Protection with Multi-Modal Biometrics: By making use of in-house dataset of iris and fingerprint. Devised a simple cancellable bio-metric filtering method to increase security of template by fusion.
- Automatic Smart Speed Governor: Proposed a cruise control system, adjusts speed of vehicle based on information obtained by sensors deployed on road to resist speed of vehicle.Selected as best project at a National Level Project Expo.

PUBLICATIONS

- Ravitha Rajalakshmi, N., R. Vidhyapriya, N. Elango, and Nikhil Ramesh. "Deeply supervised u-net for mass segmentation in digital mammograms." International Journal of Imaging Systems and Technology 31, no. 1 (2021): 59-71.
- Rajalakshmi, N.R., Sangeetha, B., Vidhyapriya, R. and Ramesh, N., 2021. Combined Radiology and Pathology Based Classification of Tumor Types. In Deep Learning for Cancer Diagnosis (pp. 99-109). Springer, Singapore.