Jayanth Shreekumar

jayanthshreekumar@gmail.com
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Jayanth Shreekumar
+1 (424) 293-9379
Los Angeles, CA, US - 90024

Education

Master of Science in Electrical and Computer Engineering — Sep 2021 - Expected, Jul 2023
University of California, Los Angeles (UCLA) — Los Angeles, United States
- Specialization in Signals and Systems.

Bachelor of Technology in Electronics and Communication Engineering — Aug 2016 - Jul 2020
PES University — Bangalore, India
- Specialization in Signal Processing. CGPA : **9.41 / 10.0**.
- Minor in Computer Science.
- Received Prof. CNR Rao Merit Scholarship for 6 semesters.

Experience

Perfios Software Solutions Private Limited — Jan 2021 - Jul 2021
Technical Intern - Data Science — Bangalore, India
- Leading FinTech company funded by Warburg Pincus and Bessemer Venture Partners.
- Worked on table structure recognition of bank statements using graph neural networks in TensorFlow, Python.
- Developed a sampling algorithm for efficient training of deep neural networks on table documents.
- Utilized Tesseract OCR for text recognition. Created code to build a pipeline to test the network on new images and to obtain evaluation metrics for quantifying its performance.

Technical Skills

Programming Languages : Python • JavaScript • C++ • C
Data Science : Numpy • PyTorch • Tensorflow • Keras • OpenCV
Web Dev. : HTML • CSS • NodeJS • ExpressJS • EJS • ReactJS
Tools : Git • Matlab • Arduino IDE • LaTeX
Databases : SQL • MongoDB • Mongoose

Publications

- J. Shreekumar, G. K. Shet, V. P. N, P. S. J and N. Krupa, "Improved Viseme Recognition using Generative Adversarial Networks," 2020 IEEE REGION 10 CONFERENCE (TENCON), Osaka, Japan, 2020, pp. 1118-1123, DOI:10.1109/TENCON50793.2020.9293784

Projects

Image Colorization — Nov 2021
Personal Project • Code — Los Angeles, California
- Built four different image colorization models using ResNet, U-Net, and Generative Adversarial Networks in PyTorch.
- Implemented a data loader with appropriate transforms, and an inference script to test on grayscale images.

Bachelor's Project, PES University - Visual Speech Recognition — Aug 2019 - Jul 2020
Advisor: Prof. Niranjana Krupa • Report — Bangalore, India
- Focused on improving viseme recognition by utilizing generative adversarial networks as a tool for data augmentation.
- Utilized VGG-16 convolutional neural network for classification. Achieved a maximum increase in viseme recognition accuracy of 3.695% over a baseline accuracy by using images generated by the PGGAN for data augmentation.
- As a part of the project, performed data pre-processing, and implemented evaluation metrics.
- Presented the paper "Improved Viseme Recognition using Generative Adversarial Networks" at IEEE Tencon 2020.
- Code written exclusively in Python. Some of the libraries used were Tensorflow, Keras, and OpenCV.

Summer Internship, Indian Institute of Science - Hearing Aid Device — May 2019 - Jul 2019
Advisor: Prof. M M Nayak — Bangalore, India
- Built a prototype of a hearing aid device using the Teensy 3.6 microcontroller and Arduino IDE.
- The prototype was a working model consisting of a microcontroller, a microphone, a DC block capacitor, and a speaker.
- Implemented amplification, filtering, noise reduction, and adaptive gain in speech signals to improve hearing in users.

Relevant Coursework

- Introduction to Computer Vision
- Matrix Analysis for Scientists and Engineers
- Digital Image Processing
- Machine Learning
- Data Structures and Algorithms
- Artificial Neural Networks