Resume

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Education

- **International Institute of Information Technology, Hyderabad** — Hyderabad, India
  Bachelor of Technology in Computer Science and Engineering GPA: 7.8 GPA(CS Major): 8.18 — *Aug. 2015 – Present*
- **New Millennium School** — Manama, Bahrain
  Secondary Education; CBSE Board, Percentage: 94.8% — *2013 – 2015*

Experience

- **Honors Research Student** — Center for Visual Information Technology
  Working under Dr. Anoop Namboodiri — *May 2017 - Present*
- **Industrial Summer Research Intern** — KLA-Tencor Software India Private Limited
  Worked in the Algorithms Team — *May 2018 - July 2018*
  - **Job**: Developing a Deep Learning Solution for Edge Detection
- **Teaching Assistant** — IIIT-Hyderabad
  Worked under Dr. Anoop Namboodiri, Dr. Praveen Paruchuri and Dr. Avinash Sharma
  - **Computer Programming**: Teaching C programming language and basic algorithms. *Aug 2017 - Dec 2017*
  - **Computer Graphics**: Taking tutorials on OpenGL, teaching basic transformations and projections and grading the students. *January 2018 - May 2018*
  - **Computer Vision**: Conducting tutorials on various concepts and implementation details, designing assignment and mentoring 10 teams for their course projects. *January 2019 - Present*

Relevant Projects

- **Eye Gaze Detection using Attention Modelling**: Deep learning model that is able to follow the gaze of a person and identify the object being looked at given an image and the location of a head. The PyTorch framework is used to implement the paper.
- **Fast Edge Detection Using Structured Forests**: To learn an accurate and computationally efficient edge detector using random decision forests. Implemented the paper in Python.
- **Style transfer for Head-shot Portraits**: Transfer style from example portraits to input using local and multi-scale technique and experimenting with various image morphing and warping functions. Matlab is used to implement the paper.
- **OMitra App**: Implemented an Android app which lets travellers on the Railway coordinate with individuals who want their package delivered.
- **Smart Contract for a Single-Minded Combinatorial Auction**: A smart contract that conducts an auction involving an auctioneer and multiple bidders, with various items to be bidded upon, was implemented in the Ethereum-based Solidity as a part of the Blockchains and Distributed Trust course.
- **3D Bloxorz Game**: A 3D game coded from scratch using OpenGL in C++, featuring various moves, viewing angles, different projections and lighting.
- **3D Fish Aquarium**: A 3D aquarium with interactive objects and camera implemented in WebGL and JavaScript.
- **2D Cannon Shooter game**: A 2D Shooter game with zoom and panning coded from scratch using OpenGL in C++.
- **Ultimate Tic-Tac-Toe AI Bot**: A bot that can play the game using Min-Max trees to calculate the moves. Reached semi-finals of the tournament.

- **Mini-DropBox**: A system which updates the files on the servers whenever a change is made in corresponding file in the local system. Implemented in Python for the Computer Networks Course.
- **A Functional Programming based Interpreter**: A interpreter for a basic Scheme language was implemented using Racket Functional Language as a part of the Principles of Programming Language course.
- **An Interactive shell**: A commandline shell implemented in C from scratch which takes in commands from the user and initiates processes based on the same. It supports background and foreground process as well as pipelining.
- **SQL Engine**: A mini-SQL engine implemented in Python.

Research Projects

- **Biometric Image Quality Metric**
  Under Dr. Anoop Namboodiri *May 2017 - Dec 2018*
  - **Aim**: To devise a new metric to evaluate the performance of existing metrics based on image quality and matching accuracy. This metric would be able to guide machine learning models in enhancing bio-metric image quality. NIST SD14 and FVC datasets are being used for analysis. Completed successfully.
- **Smart Edge detection For Electron Microscope Images**
  Internship at KLA-Tencor Technologies *May 2018 - July 2018*
  - **Aim**: To develop an edge detection algorithm that captures edges in images taken from an electron microscope that are most important in analyzing the various aspects of the yield of electronic chips. Used fully convolutional neural networks and various edge thinning algorithms. Created a full-fledged dataset of the in-house image data and their edge maps. Completed successfully.
- **Anti-Spoof Identity Verification**
  Under Dr. Anoop Namboodiri *November 2018 - Present*
  - **Aim**: To develop a identity verification system that works efficiently on natural and unstructured selfie-based face images, with anti-spoofing and liveness detection.
  - **Data collection**: Developed an Android app that lets people take selfies, tagged with their identities, location, and audio data and uploads to a server. Currently developing offline DNN based liveness detector on the phone itself.

Programming Skills

- **Languages**: : Python, Matlab, Solidity, Racket, JavaScript, C/C++, SQL, Java, Bash, HTML/CSS
- **Libraries and Frameworks**: : Tensor-flow, PyTorch, Caffe, Keras, scikit-learn, OpenCV, OpenGL, WebGL, Numpy, Truffle, Web2py
- **Tools**: : Linux, Matlab Toolkit, DrRacket, Android Studio, Git

Relevant Courses

Blockchain and Distributed Trust, Statistical Methods in AI, Computer Vision, Digital Image Processing, Artificial Intelligence, Computer Graphics, Linear Algebra, Database Systems, ITWS I and II, Data Structures and Algorithms, Digital Signal Analysis and Applications, Computer Programming, Software Analysis and Design, Formal Methods, Math I (Discrete Math), Math II (Introduction to Linear Algebra) & Math III (Probability and Complex Numbers), Computer Systems Organization, Operating Systems

Personal Interests

Soccer: Part of the college soccer team from *January 2017* to *November 2017*. Three times winner of the Inter-house tournament

Keyboard: Learning to play Carnatic music on Keyboard