

Varsha Sankar

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EDUCATION

Degree	University/Board	Institute	Year	Performance
M.S. in Electrical Engineering	Stanford University	School of Engineering	2018	3.82/4
B.E. in Electronics & Communication Engineering	Anna University	SSN College of Engineering	2016	9.42/10
B.F.A in Bharatanatyam	SASTRA University	SASTRA University	2015	84.15 %
12 th Grade	Central Board of Secondary Education	P. S. Sr. Sec. School	2012	96.2 %

ACADEMIC PERFORMANCE

- Completed B.E. in ECE with a **University rank 1**, among 29070 graduating students.
- Received **Merit Scholarship** from SSN College of Engineering between 2013-2016 for excellent academic performance.
- Qualified for the **Scholarship for Higher Education** under Innovation in Science Pursuit for Inspired Research (INSPIRE) for securing within top 1% performance in Class 12 examinations.
- Received '**Best Student Award**' from P. S. Senior Secondary School for academic performance and extra-curricular activities.

WORK EXPERIENCE

Data Scientist - SAP Labs, Palo Alto [July '18 – Present]

- Conducting research in latest Deep Learning technology for Vision and NLP and implementing productizable solutions for use cases relating to AI in Enterprise.

Remote Teaching Assistant – Machine Learning (CS 229) [Sept '18 – Present]

- Conducting Office Hours to assist students from Stanford Center for Professional Development (SCPD) with assignments, mentoring projects and grading.

Graduate Teaching Assistant - Stanford University [Sept '17 – Mar '18]

- Conducted Office hours to help students solve problems and understand course content, answered questions on piazza, mentored projects, designed grading rubrics and graded assignments for 2 graduate courses; Machine Learning (CS 229) and Computational Imaging and Display (EE 367)

Graphics Software Engineer Intern - Intel Corporation, Santa Clara [June '17 – Sept '17]

- Implemented code quality changes in C++ for High Efficiency Video Encoding Scheme across several current and future Intel processor platforms.

Intern – Gulf Outsourcing Services FZ LLC (GOSL), UAE [Dec '14]

Summer Intern – Intelligent Telecommunication Systems, UAE [May '14]

RESEARCH EXPERIENCE

Disparity Estimation for small baseline stereo images using CNNs [April '18 – Sept '18]

Advisor: Dr. Gordon Wetzstein, Department of Electrical Engineering, Stanford University

- Trained a Pyramid Stereo Matching Network with Spatial Pyramid Pooling and 3D convolutions on stereo image datasets to optimize the 3-pixel error.
- Experimented by tuning the hyperparameters and using different data augmentation strategies to make the model robust to lighting conditions.

3D human pose estimation and motion heatmap for Jackrabbot [Sept '17 – Mar '18]

Advisor: Prof. Silvio Savarese, Department of Computer Science, Stanford University

- Implemented and adapted human pose estimation algorithm to ROS for deployment in Jackrabbot – Social navigation robot.
- Trained and experimented with CCN based trajectory forecasting models to generate heatmaps for motion planning

Training Robot Navigation behaviours in real indoor environments [April '17 – Jun '17]

Advisor: Dr. Juan Carlos Nieves, Department of Computer Science, Stanford University

- Utilized 3D point cloud data of real indoor environments to generate floor plans.
- Generated expert trajectories for different navigation behaviors using classical algorithms to form a dataset that could be used for training an Inverse Reinforcement Learning model.

Dynamic User Association using Network Simulator 3 [May '15 – July '15]

Advisor: Dr. Venkatesh Ramaiyan, Department of Electrical Engineering, IIT Madras

- Implemented a novel algorithm in NS3 for 802.11 wireless clients to identify and associate with the best Access Point based on current load and SNR.

PROJECTS

Semantic Segmentation of breast cancer histology images [Spring '17]

Course: Convolutional Neural Networks for Visual recognition (CS 231n)

- Performed segmentation of histology images of breast cancer biopsies by implementing CNN models using a super-pixel and per-pixel approach to identify healthy, tumor and background areas.

Fruit Ninja - VR [Spring '17]

Course: Virtual Reality (EE 267)

- Designed Fruit ninja game for VR headsets using Unity 3D.
- Implemented head and hand orientation tracking using IMUs and Arduino and interfaced them with the UI using C# scripts.

Gaze based foveated rendering [Winter '17]

Course: Computational Imaging and Display (EE 367)

- Developed a pipeline for dynamic foveated rendering of image scenes using radial blur by tracking user's fixation point using an eye tracker.

Multi-class classification of hyperspectral satellite images [Sept '15 – Mar '15]

Guide: Prof. Venkateswaran N, SSN College of Engineering; Undergraduate final project

- Implemented multi-class classification of croplands into areas of different crops using Support Vector Machines in MATLAB.
- Experimented with different Kernel functions and one-Vs-one and one-Vs-many approaches.

PUBLICATIONS

- Prithvishankar S, Yogesh Kanna R, **Varsha S**, Venkateswaran N, “An Efficient Tensor based decomposition of hyperspectral image representation”, *2016 International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET)*, Chennai, 2016, pp. 1538-1542.

SKILL SET

- Programming: C, C++, Python (numpy, scipy, pandas, opencv), MATLAB, Julia, Java, C#
- Deep Learning frameworks: Tensorflow, PyTorch, Keras
- Design and Graphics: Unity 3D, Blender, HTML, CSS.

EXTRA-CURRICULAR ACTIVITIES

Bharatanatyam (Indian classical dance form):

- Completed B.F.A in Bharatanatyam from SASTRA University, with the highest aggregate and received Director K. Subrahmanyam endowment prize.
- Trained for past 18 years and have given over 100 stage performances as a solo artiste and in a group.
- Won several awards and titles including;
 - CCRT Scholarship – Government of India
 - ‘Best Dancer Award’ – Indian Fine Arts Society
 - ‘B Graded artist’ – Doordarshan, National Television channel of India

Music:

- Trained in Carnatic vocal music for around 8 years and pursuing B.Music from Madras University, through distance education.
- Worked on analysing the structure and content of Indian musical compositions, as a part of assignments in B.F.A. Bharatanatyam.
- Trained in Western Piano music for a year at Stanford University.
- Member of Raagapella (2016) and Stanford Spicmacay (2016-17)

Drawing and Painting:

- Participated and won in 150 drawing and painting competitions. To mention a few;
- 2nd prize (Personal Computer) in the International Arts and Crafts contest conducted by Pidilite, India in 2007.
- Received the award, ‘Yuva Kala Bharati’ from Bharati Yuva Kendra.

I solemnly declare that the above furnished details are correct and true to the best of my knowledge.