NITHIN RAGHAVAN

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EXPERIENCE

OCT 2019 - PRESENT

VISUAL COMPUTING LAB, UC BERKELEY

UNDERGRADUATE RESEARCHER

- Co-authored NeurIPS spotlight publication (top 3% of papers) on Fourier Features, a new concept in neural network theory.
- Researched volumetric octree compression on a voxel grid for the Neural Radiance Functions (NeRF) paper.

JUN 2020 - AUG 2020

FORD GREENFIELD LABS

RESEARCH INTERN

- Worked on a neural network architecture to generate depth and segmentation maps from a single RGB image.
- Reduces cost to generate such maps to zero, compared to thousands of dollars currently required.

MAY 2019 - AUG 2019

SAMSUNG ADVANCED COMPUTING LAB

RESEARCH INTERN

- Wrote neural networks to perform ambient occlusion and physically-based rendering style transfer for simple scenes.
- Researched the graphics pipeline and deep learning model optimization on Samsung's future compute architecture.

PROJECTS

JUL 2019

SOFTWARE RENDERER

- Developed a software-based rasterizer and renderer with pixel and vertex shader support in C++.
- Capable of barycentric interpolation, backface culling and block-based rasterization.

DEC 2017 - PRESENT

RESOURCE-PROVISIONING GPU SERVER

- Developed a Python-based shell to automate on-demand request processing and resource provisioning in a GPU cluster.
- Uses Slurm for cluster management and deploys tasks in Docker containers.

JUL 2019

WAVELET-BASED COMPRESSED SENSING

- Uses LASSO and the discrete wavelet transform to compress or denoise audio representations by any amount.
- Can be used in an ML pipeline for signal preprocessing.

EDUCATION

UC BERKELEY

2017 - 2021

COMPUTER SCIENCE
APPLIED MATHEMATICS

GPA: 3.73

COURSEWORK

Data Structures
Efficient Algorithms
Optimization Models
Numerical Analysis
Partial Differential Equations
Introduction to Robotics
Introduction to Machine Learning

SKILLS

LANGUAGES

Python
C/C++
Java
Matlab

SOFTWARE

Numpy/Scipy
Pytorch
OpenCL
Bash
Docker
Tensorflow