

Subramanya Nagabhushanaradhya

+1 (413) 425 3245 | snagabhushan@umass.edu | www.linkedin.com/in/nsubramanya | www.github.com/subramanya1997

EDUCATION

University of Massachusetts

Amherst, MA

Master of Science in Computer Science

Expected May 2023

- Courses - Neural Network, Advanced Natural Language Processing, Intelligent Visual Computing, Mathematical Statistics 1, Systems for Data Science, Reinforcement Learning

The National Institute of Engineering

Mysore, India

Bachelor of Engineering in Computer Science (8.4 / 10)

Aug 2015 - May 2019

- Courses – Operating System, Data Structures & Algorithms, Data mining and warehousing, Deep Learning (Andrew NG)

SKILLS

Programming Languages : Python, C/C++, HTML/CSS, JavaScript, SQL, GLSL

Python : PyTorch, NLTK, scikit-learn, pandas, numpy, scipy, matplotlib, OpenCV,

Others : Linux, three.js, node.js, Web Scraping, Unreal Engine, Git, Blender, L^AT_EX, Google Colab, ZMQ, flatbuffer

EXPERIENCE

Human Centered Robotics Lab, UMass, Amherst

Amherst, MA

Graduate Student Researcher

June 2022 – Present

- Advised by Prof. Hao Zhang.

Ribbon Communications

Westford, MA

Data Scientist Intern

June 2022 – Present

- Experimenting with multi-modal approaches for classification, auditing and optimizing through VoIP data.
- Mentored by Chip Boyle.

Vertica

Pittsburgh, PA

System Software Engineer Intern

June 2022 – August 2022

- Improving and optimizing database re-shading method in Eon mode.
- Improved backtracking of newly created storage containers while performing operations like re-shard, ILM and alter table.
- Designed and developed pipelines for data analytics and machine learning teams to work on backup and restore information.

RenderPub

Bangalore, India

Head of Product Development

Jun 2019 - May 2021

- Developed, designed, and integrated common Unreal Modules (CUM) - a foundational, modular C++ / Blueprint modules for RenderPub's Unreal Engine 4 based applications. CUM comprises of modules like RenderPub Walk Exporter, Dynamic Sky and weather systems, modular UI, Importer using Assimp, terrain system with sculpting tools at runtime, Mass Placement, Array Placement and Mesh Painting tools at runtime.
- Designed and developed a desktop application using next.js, electron and react to launch, auto-updated, bookkeep RenderPub suite of applications and projects with features like auth, news feeds, account, profile settings and more
- Developed RenderPub Launcher based on electron.js and next.js, integrating features like account, news feed, keeping track of saved projects and auto update for RenderPub suite of applications
- Core architect, developer, and designer for RenderPub Stitch - A desktop application built on unreal engine 4 to help designer explore RenderPub walk from other rendering engines like V-Ray, Cycles, Eevee, etc.

Software Engineer Intern

Jun 2018 - May 2019

- Core architect, developer, and designer for RenderPub Walks - A web-based 3D application built on three.js
- Developed a streaming, tile-based, 360-degree panorama loading system and implemented a model touring and panorama-transition system using custom WebGL code
- Scripted a Python and OpenCV module to calculate projection of images in RenderPub Walks which was later ported to C++

PROJECTS AND RESEARCH

Vision-Language Integration for Robot Reference of Arbitrary Objects

Sept 2022 – Present

- Experimenting with multi-modal learning approach to get attribute-based representations from natural language and visual descriptions.
- Advised by Prof. Hao Zhang of Human Centered Robotics Lab at UMass.

MEME: Mixture of Experts for Multimodal Egocentric Videos

Feb 2022 – June 2022

- Experimenting with joint multitask, multimodal learning approach to get universal representations for egocentric videos that can be further evaluated on benchmark tasks proposed by EGO4D dataset.
- Advised by Postdoc Jay-Yoon Lee at UMass and Shane Moon of Meta Reality Labs.

Monocular Depth Estimation on Low Light Images via Transfer Learning

Sept 2021 – Dec 2021

- Designed a model that uses transfer learning in estimating depth from low light or monochrome images using a standard encoder-decoder architecture, by leveraging features extracted using high performing classification model such as DenseNet while initializing the encoder.
- The research study shows that even for a simple decoder, our model can achieve close to state-of-the-art high resolution depth maps on the NYU depth dataset.
- <https://github.com/subramanya1997/Low-Light-Single-Image-Depth-Estimation-via-Transfer-Learning>

Mental health dialogue system for emotional well-being using deep learning (Novel-T5)

Sept 2021 – Dec 2021

- Proposed a extend T5 based model with 2-layer sentiment classifier and an auxiliary loss function during training, to apply sentiment understanding and enforce empathetic response generation.
- Our model achieved perplexity of 13.9 and performed better in Emotional Appropriateness, Relevance and Readability than the baseline T5 model finetuned on Empathetic Dialogues dataset
- <https://github.com/subramanya1997/Novel-T5>

Indoor Panoramic Roaming System

June 2019 – Dec 2019

- Compared with typical solutions like blending, stretching and parallax-effect methods, this solution provides a natural transition effect, which is very similar to that of person sees while walking in 3D space from one view to another. It is designed and developed on three.js.
- <https://github.com/subramanya1997/Indoor-Panoramic-Roaming-System>

For other projects and open-source contributions visit www.github.com/subramanya1997