

Subramanya Nagabhushanaradhya

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EDUCATION

University of Massachusetts

Master of Science in Computer Science

- Courses - Neural Network, Advanced Natural Language Processing, Intelligent Visual Computing, Mathematical Statistics 1

Amherst, MA

Expected May 2023

The National Institute of Engineering

Bachelor of Engineering in Computer Science (8.4 / 10)

Mysore, India

Aug 2015 - May 2019

EXPERIENCE

Vertica

System Software Engineer Intern – Summer

Pittsburgh, PA

June 2022 – Present

- Improving and optimizing database re-shard method in Eon mode.
- Developing pipelines for data analytics and machine learning teams to work on backup and restore information.

RenderPub

Head of Product Development

Bangalore, India

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

MEME: Mixture of Experts for Multimodal Egocentric Videos

Feb 2022 – Present

- 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.
- Undergoing the research project under the guidance of Prof. Andrew McCullum at UMass and Meta Reality Labs Shane Moon.

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 is able to 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>

SKILLS

Programming Languages: **Python**, C/C++, HTML/CSS, JavaScript, SQL, Ruby, GLSL, node.js, React, three.js, next.js

Others: **PyTorch**, TensorFlow, OpenCV, three.js, Web Scraping, Unreal Engine, Git, Blender, L^AT_EX, Google Colab, ZMQ, flatbuffer