Stanley Edward

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Education

SRM Institute of Science and Technology - Chennai, India Jun 2022 – May 2026

Overall GPA: 9.08/10.00 : B.Tech in Computer Science Engineering with spl. in Big Data Analytics

Relevant Coursework: Calculus and Linear Algebra — Advance Calculus and Complex Analysis — Probability and Statistics — Discrete Math — Digital Image Processing — DSA — Design and Analysis of Algorithms — Advanved OOP — Operating Systems — DB Management Systems — ANNs — ML for Data Analysis — Compiler Design

Experience

Research Director Jul 2024 – Present

Data Science Community SRM *Chennai, India*

- Co-led with 2 research supervisors to guide and mentor members on projects and initiatives.
- Directed a project blocking 96% of explicit content to enhance the security of children in online environments.
- Architected a queue-based parallel computing framework, accelerating machine learning processing by 3x across diverse content channels, including text, image, speech, and video.

Member of McCarthy Lab Oct 2023 – Present

Next Tech Lab *Chennai, India*

- Advanced a suite of deep learning projects, sharpening expertise in 3D/computer vision, and graphics domains.
- Fostered lab growth and collaboration by recruiting new associates and engaging in 20+ paper discussions, seminars, and talks to stay current with emerging research.

Projects

High Performance Neural Networks | *CUDA, Nsight, C/C++*

- Reduced training epoch times by 49% by developing a GPU-accelerated neural network pipeline.
- Attained a 6x speedup by implementing L1 cache tiling, minimizing memory access latency in FMA kernels.
- Developed an optimized Softmax kernel that reduced compute time by 2 orders of magnitudes through shared memory reduction and coalesced accesses.

Neural Radiance Fields | *PyTorch, Weights & Biases, Python*

- Executed the Neural Radiance Fields research methodology to deliver novel view synthesis and 3D scene reconstruction, achieving robust results on the NeRF synthetic datasets.
- Enhanced deep learning workflow by integrating PyTorch Lightning and Weights & Biases, automated the tracking and monitoring of 10+ experiments to boost reproducibility and accelerate model iteration.
- Achieved an average Peak Signal-to-Noise Ratio score of 29.20 on the test set for View Synthesis.

Recursive Ray Tracing Engine | *OpenGL Math, C++*

- Developed a rendering engine to render a diverse range of 3D visual compositions.
- Leveraged Phong Illumination along with reflection and shadows to accurately simulate light physics.
- Implemented efficient ray-geometry intersection algorithms for 3D primitives at arbitary orientations.

Vision Transformers | *PyTorch, Tensorboard, Python*

- Implemented the ViT-B/16 model from the research paper "An image is worth 16x16 words" in PyTorch.
- Authored a DataX Journal article analyzing the transformative impact of Transformer Architecture in the 2020s.

Technical Skills

Languages: Python, CUDA, C/C++, Bash, SQL.
Frameworks: PyTorch, PyTorch Lightning, OpenCV, Selenium, OpenGL.
Software: Weights and Biases, Github, Docker, Vast.ai, Nsight.
Libraries: Numpy, Pandas, Sci-kit Learn, Matplotlib, Einops.
Developer Tools: Unix/Linux, Visual Studio Code, Git, Conda, Tmux.

Course Certifications

CSE167x: Computer Graphics | *UC San DiegoX* Mar 2024
First Principles of Computer Vision Specialization | *Columbia University* Feb 2024
Deep Learning Specialization | *DeepLearning.AI* Dec 2023