JAIDEV SHRIRAM KARIYATT

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EDUCATION

University of California, San Diego　　　　　　　　　　　　　　　　Expected June 2024
Master of Science in Computer Science, **GPA: 4.0/4.0**　　　　　　　　　　*San Diego, USA*

International Institute of Information Technology, Hyderabad　　　　　　May 2022
Bachelor of Technology in Computer Science, **GPA: 9.37/10**　　　　　　　*Hyderabad, India*

SKILLS

Languages: Python, C, C++, MATLAB, JavaScript, HTML/CSS, Bash
Tools: PyTorch, Git, OpenCV, Kornia, Open3D, Pandas, Wandb, Tensorboard, Kubernetes, Docker,
Relevant Coursework: Machine Learning, Computer Vision, 3D Deep Learning, Probabilistic Models, Optimization

PUBLICATIONS AND PATENTS (* = FIRST AUTHOR)

Leveraging Attention for Indoor Layout Estimation	*Comp. Vision, Machine Learning*	**IROS '22 (Patent Filed)**
(Award Winner) Automated Soundtrack Construction*	*Comp. Vision, Machine Learning*	**ISMIR '22 (Patent Filed)**
Analyzing Lyrical Preferences for Individuals At Risk of Depression*	*Data Analytics*	**SMM '21 @ INTERSPEECH**

EXPERIENCE

Computer Vision Researcher (3D Generation)　　　　　　　　　　March 2023 – Present
Center for Visual Computing, UCSD　　　　　　　　　　　　　　　　*San Diego, USA*
- Built a novel technique for text based 3D generation, surpassing prior work in scene quality and scale, for use in VFX and AR/VR
- Extensively researched and studied large scale diffusion models, particularly as 2D priors for optimization

Computer Vision Intern (3D Mapping)　　　　　　　　　　June 2023 – September 2023
Plus AI (Self Driving Truck Company)　　　　　　　　　　　　　　　*Santa Clara, USA*
- Improved 3D mapping quality by 20% using deep learning based feature extractors and matchers, in Python and C++
- Achieved 90% time savings by automating a manual lane labelling pipeline using 3D semantic reconstruction

Computer Vision Researcher (2D Mapping)　　　　　　　　　　May 2020 – May 2022
Robotics Research Center, IIIT-Hyderabad　　　　　　　　　　　　　*Hyderabad, India*
- Surpassed state of art by 10% on mapping indoor spaces, resulting in a top IEEE conference publication (IROS '22)
- Improved robot navigation by 27% in indoor simulations, with smarter routes afforded by our CNN map estimator

Computer Vision Researcher　　　　　　　　　　　　　　January 2021 – May 2022
Kohli Center on Intelligent Systems, IIIT-Hyderabad　　　　　　　　　*Hyderabad, India*
- Published a breakthrough technique for book soundtracking using multi-modal machine learning techniques (ISMIR '22)
- Built a novel unsupervised text segmentation technique and improved prior text-video alignment using CLIP based ranking

Software Engineering Intern　　　　　　　　　　　　　June 2021– August 2021
Graphics and Experiential Media Lab, Dalhousie University　　　　　　　　*Halifax, Canada*
- Funded by Mitacs (Globalink Scholarship) for a project to improve character navigation in Virtual Reality
- Devised novel pathfinding techniques on navigation graphs using spatial information, enhancing character realism

ACADEMIC PROJECTS

Personalized, Diffusion Guided Text to 3D Generation | *Computer Vision, Machine Learning [Python]*
- Generated personalized 3D objects using a reference image and text customizations, reproducing Dreambooth3D (ICCV '23)

Neural 3D Reconstruction from Images | *Computer Vision, Machine Learning [Python]*
- Reconstructed complex 3D objects using neural radiance fields in PyTorch, achieving 30+ PSNR on novel view synthesis

Efficient Key-Value Storage API | *Software Development [C++]*
- Outperformed 25 teams (#1 rank), handling one million concurrent API requests with minimal RAM and CPU usage
- Built a compressed trie from scratch with memory optimizations to maximize key-value API transaction throughput

AWARDS AND ROLES

Google Research Week (Computer Vision) India 2022 Participant
Dean's Award for Academic and Research Excellence (*IIIT Hyderabad*)
Winner of 'Brave New Idea Award' at the *International Society for Music Information Retrieval Conference 2022*
Runner up at Megathon'19 (National Hackathon in India) | *Awarded by PricewaterhouseCoopers*