GIRIDHAR NARASAPURA RAJAGOPALAIAH

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EDUCATION

University of Southern California — Los Angeles, CA
Master of Science - Computer Science (Emphasis: Artificial Intelligence) — *December 2023*

Nitte Meenakshi Institute of Technology — Bengaluru, India
Bachelor of Engineering - Computer Science and Engineering — *July 2018*

WORK EXPERIENCE

Deep Learning Student Researcher (Computer Vision) – Laboratory of Neuro Imaging, USC — Los Angeles, CA
Research Focus- Multi site MRI Data Harmonization. Advisor – Dr. Yonggang Shi — *May 2022 - Present*

- Developed a **3D Cycle Generative Adversarial Network** to harmonize MRI data between scanners for better understanding of AD.
- Developing an **Attention Gaited Transformer** for unpaired image-to-image translation.

Machine Learning Student Researcher (NLP) - Dept. of Population and Public Health Sciences, USC — Los Angeles, CA
Research Focus- AI for Empathy in Healthcare. Advisor – Dr. Daniella Meeker — *March 2022 - Present*

- Co-leading a project to devise an automatic speech and language processing pipeline to diarize and recognize speakers using **RNN-Transducers** and Attention based models from an empathetic audio encounter.

Research Engineer – Philips Innovation R&D — Bengaluru, India
Research Focus- Ultrasound Medical Imaging using Computer Vision and Deep Learning — *Aug 2018 - Dec 2021*

- Researched and developed a **real-time pose estimation model** to track systole and diastole phases of a fetal heart. Developed Deep Learning architectures for high accuracy **semantic segmentation** of anatomies of fetal heart.
- Researched and developed the architecture of a classification neural network to learn behavior of key-planes in a fetal heart. Improved the performance of the plane identification algorithm from **69% to 84%.**
- Contributed significantly to transfer Deep Learning Algorithms to the Business.

PROJECTS

[1] Little GO - USC: Designed an AI agent using reinforcement learning which learns the rules of Go Game and plays against different players using minmax and alpha-beta pruning.

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[1] Modelling of Transitions in Video Using Textures. Registration Number: SW-14707/2017. Granted by Govt. of India.

PATENTS (Filed by Koninklijke Philips N. V)

[1] Methods for Guided 3D ultrasound acquisition using Spatio-Temporal Image Correlation (App no: PCT/EP2021/081925)
[2] Automatic Intelligent Visualization and Interaction using Real Time View Plane Classification and Pose Estimation (App no: PCT/EP2021/080229)
[3] Automating Localization and Estimation of Heartbeat in First Trimester Ultrasound Scans (App no: PCT/EP2022/066933)
[4] AI Based Approach to improve Ultrasound Image Quality. (App no: 2020ID01990)

PUBLICATIONS

[1] Karthik Krishnan, **Giridhar NR,** Celine Firtion and Pallavi Vajinepalli. Real Time Deep Pose Estimation in Ultrasound. Publisher: Philips Research Global – OCUPAI 2020

[2] **Giridhar NR,** Aniketh Manjunath and Jharna Majumdar. Modelling Fade Transition in a video using Texture Methods. ICCMLA Goa 2020. Publisher: Springer, Singapore.

[3] **Giridhar NR,** Gagan PE and Jharna Majumdar. Autonomous Mobile Robot Navigation on Identifying Road Signs using ANN. IIT Kanpur 2019. Publisher: IEEE

[4] Aniketh Manjunath, **Giridhar NR** Jharna Majumdar. Optical Flow for Detection of Transitions in Video, Face and Facial Expression. IEEE SAI Computing Conference, London - 2018. Publisher: Springer, Cham.

[5] Sudip Gupta, **Giridhar NR** and Jharna Majumdar. Human Tracking by a Mobile Robot in Low Illumination Environment Publisher: IEEE

TECHNICAL SKILLS

C, C++, CUDA, Python, PyQt, TensorFlow, PyTorch, Caffe, OpenCV, cuDNN, TensorRT, OpenVINO, Linux, Git, Statistical Analysis, Digital Image Processing, Computer Vision, Natural Language Processing, Machine Learning, Deep Learning, Adversarial Networks, Transformers.

HONORS AND AWARDS

- Oct' 21: Start Startup Award from Ramaiah Evolute for 'Postura'.
- June 20: Individual Award (Philips) – 'Take ownership to deliver fast' to boost the accuracy of algorithm from 69% to 84%
- May 19: Individual Award (Philips) – Bringing wAssist-AI from research prototype to product in record time
- Apr' 18: DRDO: DRUSE Design and Development of Human Tracking Mobile Robot for Defense Application. Top 10 among 15000 teams to represent South India.
- Dec' 16: Placed 2nd among 850 teams in Nokia Innovation Day - Campus