**Giridhar NR**
**Bengaluru, India | narasapu@usc.edu | LinkedIn |Google Scholar**

***Education:***

**University of Southern California** **Jan 2022 - Present**
Master of Science, Computer Science - Artificial Intelligence Los Angeles, CA
**Nitte Meenakshi Institute of Technology (NMIT), VTU** **Aug 2014 - May 2018**
Bachelor of Engineering in Computer Science and Engineering ***GPA: 8.86*** Bengaluru, India

***Professional Experience:***

***Co-founder and CTO, AIVolved Technologies Pvt Ltd, India*** ***Nov 2019 - Dec 2021***

- AI Motion Analyzer: Developed a semantic segmentation network coupled with Vision Transformers model to obtain the three rockers from which GAIT parameters are calculated. Obtained Grants from Govt. of India & Ramaiah Evolute.

***Research Engineer, Philips Innovation Campus, India*** ***Aug 2018 - Dec 2021***

- Built a generalized OCR to recognize characters on an ultrasound image
- Developed a real-time pose estimation model to track systole and diastole phases of a fetal heart
- Created deep learning architectures for high accuracy semantic segmentation of anatomies of fetal heart
- Researched and developed a reinforcement learning agent to acquire and learn behavior of key planes in a fetal heart
- Optimized deep learning models using OpenVINO and TensorRT to run it on Intel NUC and Jetson Nano

***Research Associate, Centre for Robotics Research, NMIT, India*** ***Aug 2016-Oct 2019***

- Designed a face and facial expression detection algorithm using corner detector (SIFT) and optical flow
- Researched and modelled an algorithm to detect hard cut and gradual transition in a video using corner detector (SIFT) and Textural Methods (**copyright: SW-14707/2017**) respectively
- Using a PID controller, refined the usage of Linear Quadratic Regulator to control velocity and position of mobile robots and designed an algorithm to track targets in a low illuminate environment using adaptive enhancement techniques.
- Researched and developed a computer vision model to detect road signs using corner detectors (SIFT, SURF, ORB), Maximally Stable Extremal Regions (MSER) and ANN. This was implemented on a mobile robot

***Patents*** ***2020-2021***

- Methods for Guided 3D ultrasound acquisition using Spatio-temporal image correlation (app no: PCT/EP2021/081925)
- Automatic Intelligent Visualization and Interaction using Real time View Plane classification and Pose Estimation (app no: PCT/EP2021/080229)
- Automating Localization and Estimation of Heartbeat in First Trimester Ultrasound Scans (App no: 21184713.2 – in process)
- AI Based approach to improve ultrasound image quality (ID no: 2020ID01190 – in process)

***Publications:*** ***2018 - 2020***

- e-FTUS: An Early First Trimester Ultrasound Scan assistance **(Philips Internal: OCUPAI20)**
- Real Time Deep Pose Estimation in Ultrasound **(Philips Internal: OCUPAI20)**
- Optical Flow for Detection of Transitions in Video, Face and Facial Expression; **Publisher:** Springer, Cham
- Human Tracking by a Mobile Robot in Low Illumination Environment; **Publisher:** IEEE
- Autonomous Mobile Robot Navigation on Identifying Road Signs using ANN; **Publisher:** IEEE
- Modelling Fade Transition in a Video Using Texture Methods; **Publisher:** Springer, Singapore

***Awards:*** ***2018-2021***

- **Individual Award (Philips):** Bringing wAssist-AI from research prototype to product in a record time
- **Individual Award (Philips):** 'Take ownership to deliver fast' to boost the accuracy of algorithm from 69% to 84%
- **DRDO:** DRUSE Design and Development of Human Tracking Mobile Robot for Defense Application. Top 30 among 15000 teams to represent South India
- 2nd position, Modern Traffic Management System, among 850 teams in Nokia Innovation Day, Bengaluru

***Technical Skills:***

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|---|---|
| **Programming Languages:** | C, C++, Python, Java, HTML |
| **Frameworks:** | TensorFlow, Keras, PyTorch, OpenCV, CUDA, cuDNN, TensorRT, OpenVINO |
| **Applications:** | Android Studio, Visual Studio, Eclipse, Anaconda, Qt |
| **Database Management System:** | MySQL, SQLite |