

Bonn , Germany

# ANIRUDH

## NARASIMAMURTHY JAYASIMHA

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### Employment

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**Student Research Assistant**      **Fraunhofer FKIE, Wachtberg - Germany**      **June 2019 - Present**  
**Cognitive Mobile Systems**

- Research ways to integrate Unity with ROS for robot visualization. (C# , python)
- Create pipeline to implement teleoperation of robot arm using Virtual Reality in Unity and ROS. (Unity, C++)

**Senior Software Engineer**      **Cognitive Machines , Bangalore - India**      **Feb 2016 - May 2018**  
( <https://www.cognitivemachines.in/> )

- Offline Drone photography based vehicle counting system for parking lots using an SVM based object finder with over 90% accuracy. Special statistical and geometrical techniques used to find the vehicles at different orientations. (C++ , Qt , OpenCV , DLib)
- 3-Month Project on Augmented Reality application with custom algorithm based on Natural Feature Tracking for both Android and iOS. (Basic Java/NDK Android , Basic Swift iOS , OpenCV)
- In-house image processing framework built on process block architecture. The framework was designed to be modular enough to be used with all the projects requiring Computer Vision. (C++ , OpenCV)
- Internal tools for image annotation and augmentation using Qt-Framework. (Qt , C++)

**Graduate Engineer Trainee**      **JK Tyres , Mysore - India**      **July 2015 - Feb 2016**

- Responsible for coordinating and overseeing the shift and work of the employees.
- Material procurement for preventive maintenance of equipment.

### Education

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**Bonn, Germany**      **Bonn-Rhein-Sieg University of Applied Sciences**      **Sept 2018 - Present**

- Masters in Science (M.Sc) , Autonomous Systems  
(<http://www.b-it-center.de/b-it-programmes/msc-in-autonomous-systems/description/>)
- Graduate Coursework: Advanced Software Technologies ; Mathematics for Robotics ;  
Introduction/Advanced Scientific Working ; Artificial Intelligence ; Autonomous Mobile Robotics

**Mysore, India**      **National Institute of Engineering**      **Aug 2011 - June 2015**

- Bachelor of Engineering ( B.E ) , Mechanical Engineering
- Coursework: Basic CS, Dynamics of Machines, Kinematics of Machines, Heat Transfer, Advance Thermodynamics

## Technical Experience

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### Projects

- *Qt Based Image Annotation Tool* : Annotation tool for creating training images for machine learning.
- *AR-Toolkit 5 and OpenCV based Natural Feature Tracking application* : Integration of AR-Toolkit C++ with OpenCV and was able to convert output Pose Matrix to required format.  
(<https://github.com/njanirudh/OpenCV-ARTK>)
- *Python AR Application* : OpenGL and OpenCV based AR app with JSON based process block architecture.  
(<https://github.com/njanirudh/Augmented-Reality>)
- *Robot localization and tracking* using computer vision and aruco markers.  
([https://github.com/njanirudh/robot\\_tracking](https://github.com/njanirudh/robot_tracking))

### Research

- **Research and Development** on “*Manipulation of Handles in Domestic Environments*” .  
Involves the design of the general pipeline required for the above task. Literature search on the possible methods that have been used for solving the subtask of Perception and Manipulation.  
(<https://github.com/njanirudh/Research-Development-HBRS>)
- Research on the topic “**Robot Learning**” and summary for top relevant papers.  
(<http://www.shortscience.org/user?name=anirudhnj>)

## Additional Experiences and Awards

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- **First Prize** for presentation on topic “**Wing in Ground(WIG) effect and its practical applications**” during Undergraduation
- **SAE-India** : Volunteered for organizing one of the biggest Automotive fest in Mysore “Automotive Technology Fest - 2014”.

## Technology Stack

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### Programming Languages

- C++
- Python
- Java Android and NDK (Basic experience)

### Frameworks and Tools

- OpenCV
- Tensorflow 1.14 (Object Detection API)
- ROS
- Qt (C++, Python)
- Git Version control system

## Communication Skills

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- English (Business Proficiency)
- German (Basic)
- Hindi
- Kannada