Varun Ganjigunte Prakash

Engineer

I want to be a good Roboticist, an astute learner, visionary and competitive with the changing scenario of the world. I am a Computer Vision, Robotics enthusiastic engineer and practitioner. I am gulping the concepts to learn, to fail and then to make things work by experience. Building goal oriented machines that can sense, plan and act safely and helping people is my long term life goal

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Bengaluru

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SKILLS

Python	Research	C++	MATLAB
ROS	C	Algorithms	Embedded C

WORK EXPERIENCE

Engineer

L & T Technology Services

06/2018 – Present *Bengaluru*

Roles

- I am currently exploring new facets in subsets of Artificial Intelligence to establish strong customer relationship from ideation to realization. Developed three Computer Vision based software applications for edge inference products for leading AI and Semiconductor customers. Proposed improvements on existing Computer Vision frameworks. I took ownership and was part of many AI based initiatives in Semiconductor business unit.
- Worked on few Deep Learning applications and showed performance improvement using OpenVINO toolkit. I also got many opportunities to meet and teach engineers about Deep Learning for Computer Vision.
- Process Automation (2018 - June 2019): I was responsible for bringing out improvements in the business process with automation. I have automated simple and repetitive tasks. I was involved to help teams find solutions to a problem and simplify them with automation. I stood out as the only one among hundreds in the Transportation business unit, ready to automate almost anything to speed up process with opensource tools. Few scripts I wrote reduced hours of manual work into minutes (~10x faster). Some works were fruitful and learnt lessons from the rest.

EDUCATION

Bachelor of Engineering in Electronics and Communication

Sri Jayachamarajendra College of Engineering, Mysuru

08/2014 – 05/2018 *8.47 CGPA*

Pre-University

Sadvidya Composite Pre-University College, Mysuru

06/2012 – 05/2014 *96.5%*

Secondary School

Sadvidya High School, Mysuru

06/2011 – 05/2012 *96.8%*

INTERNSHIPS

Computer Vision Intern (02/2018 – 05/2018)

Skylark Drones

- Worked on an R&D project to develop an aerial image overlap checker to account for terrain variation problem for drones.

Embedded systems and wireless network Intern (06/2016 – 12/2016)

LogicHive Solutions Pvt Ltd.

- Worked on various projects that involve multifarious sensors to implement practical applications of Ethernet, Bluetooth, Wifi and other networking principles. Some of the projects that include the design of applications are GPS Geofencing with ZigBee, robot control, RF communication, Electronic weighing scale for liquid measurements.

PROJECTS

Study and development of a 4-axis robotic arm: Aim is to understand 6DOF pose estimation, planning and control (02/2020 – Present)

- Platform: ROS, Gazebo, TensorFlow.
- Aim is to design, simulate in ROS and testing on custom built manipulator for 3D object grasp with Deep Learning.

Food classifier application and Indian Currency Recognition application (02/2018 – 09/2019)

- Platform: TensorFlow (Keras), Python, Android.
- 1) A food classifier mobile application which identifies and discovers related information about the food such as nearest restaurants where it is available, the item cost etc., on the click of a photo. Developed for 20 most common Indian food items. 2) Demonstration of Cash Recognition mobile application for Indian currencies.

Dexterous Service Robot (07/2017 – 07/2018)

- Platform: ROS, Python.
- The purpose of our project is to build a home assistant robot to assist differently-able and aged persons. The proposed robot helps such people by performing some of the common tasks involved in our daily life through human-machine cognitive learning. A 5 DOF Dexter ER-2 arm mounted on a vehicle is operated by voice commands to selectively search and deliver the article required by the user. Simulation is also performed to check the feasibility of the planned path for arm's joints and to avoid a collision in a dynamic 3D environment. A paper on it was accepted for Oral presentation at Advances in Robotics 2019 Conference.

Colour based object sorting using DEXTER ER-2 (01/2017 – 03/2017)

- Platform: MATLAB.
- The aim of this project was to sort objects based on color by using a heavy duty robotic arm (DEXTER ER-2). The algorithm used Image Processing and Inverse Kinematics concepts. Colored objects of different sizes were also sorted.

Autonomous object delivery robot (10/2016 – 02/2017)

- Platform: AVR Studio and Python IDE.
- The project aims at selective object delivery based on shape, size, and color of the objects. Objects and surrounding obstacles were analyzed by using Image Processing concepts programmed in OpenCV-Python. Fire Bird V robot was navigated using XBee wireless communication. A robotic gripper has been designed to pick and deliver objects. The project helps to understand and improve the autonomous delivery robot system which is efficient and self-reliant.

Other projects

- Biomorphic Hyper-redundant Snake robot(Oct 2017 - Jan 2018): The aim of this project is to build a robot resembling a snake. The different gaits of a biological snake such as serpentine, caterpillar and sidewinding motion are studied and simulated in V-REP. The body of the snake is designed in Autodesk Fusion 360. This project is a part of E-yantra robotics competition-2018.
- A group project on Smart Solar Battery Charger, This is a battery charging system whose output power is controlled by monitoring the status of the battery. The system also includes a protection mechanism against over-current in cases of bright ambiance.
- A group project work on Patient Registration System for healthcare units.
- Design of transmitter and receiver encrypted communication system using Morse code.

ACCOLADES AND CAUSES

Presented the paper 'Autonomous Service Robot' in Advances in Robotics Conference 2019 and it was published in ACM ICPS.

Received certificate of participation/appreciation in Anveshan Fellowship 2018 of Analog Devices India for designing, developing and proposing our project 'Dexterous Service Robot' among top 7 finalists in India. The competition involves full-fledged product development in 6 months that can uplift the standard of living of our society

Recieved certificate of participation for implementation of a theme 'Launch a Module' in e-Yantra Robotics Competition 2016

Presented a technical paper entitled 'Colour based Object Sorting Robotic arm using Image Processing' in National Conference on Robotics, Automation, Control and Embedded Sytems (NCRACES-2017)

Completed DELF B1 (Advanced) Certification for Diploma in French Language administered by International Centre for French Studies for France's Ministry of Education

Active member of IEEE-SJCE student branch

Omdena collaborator (ML Engineer) to solve renewable energy AI challenge for African communities

Active volunteer at U&I charitable organization

INTERESTS

Robotics, Computer Vision, Research and Development, Mechatronics, Embedded Systems, Algorithms, Deep Learning, Control Theory, Artificial General Intelligence, Robot Design

Love to build robots

Building products and providing solutions with Computer Vision techniques, Design and development of Robots, related algorithms, simulation and deployment

LANGUAGES

French - B1 ●●●●●

Kannada ●●●●●

Spanish (beginner) ●○○○○

English ●●●●●

Hindi ●●●○○

HOBBIES

Learning foreign languages, Reading French and English novels (Mystery, Suspense, Thriller, Sci-Fi), Pencil sketching and listening to French music and translating lyrics to English