ASHESH VASALYA, PhD

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"Self-taught, self-managed, solution-oriented individual, carrying 7+ years of cumulative experience in Robotics and AI, looking for a responsible position to gain practical experience, an opportunist who is always up to challenges for both personal and team growth."

WORK EXPERIENCE

AIST, Japan
Researcher — *Feb 2021 – Present* (FT)

Developing an end-2-end deep predictive learning system to allow robots to learn multi-stage tasks simultaneously in a virtual environment using a human avatar.

Researcher — *Feb 2020 – Present* (FT)

Developing deep learning model(s) for object segmentation and 6D pose estimation, along with grasp point detection for closely-kept object(s). My other responsibilities include but are not limited to:

- Deploying latest research solutions in Deep Learning.
- Developing custom object's 3D models for simulation and training.
- Addressing problems such as object detection, classification, and segmentation using DL approaches.
- Solving Sim2Real challenges during synthetic dataset generation for object detection and segmentation, pose estimation.
- Research and develop novel methods to solve object pose estimation and grasp point detection problems.
- Testing the reliability and performance of Deep Learning solutions on real robots during object manipulation tasks.
- Providing end-2-end technical support to third-party client.

CNRS-AIST-JRL (CNRS), France
Researcher — *Dec 2015 – Dec 2019* (FT)

This position was started alongside PhD, initially I studied the influence of humanoid robot (HRP2-kai) on the performance of its human co-worker during a similar task. Later I developed a framework for the fluid and intuitive bi-manual bi-directional object handover between human and humanoid using whole-body control and locomotion.

Puli Space, Hungary
Developer Engineer — *March 2015 – Aug 2015* (FT)

Developer Engineer of a Lunar Rover with Puli Space a *Google Lunar XPrize* Team. I was involved during its avionics development along with the vision-based control system for autonomous navigation of their Rover.

Flanders Make, Belgium
Graduate Intern — *July 2014 – Sept 2014* (FT)

The goal of this internship was the evaluation of IMU and feasibility study of trajectory estimation based on the IMU signals for a badminton playing robot.

AWARDS

2013 **Fully Funded Master's Scholarship**
Erasmus Mundus (HERITAGE)

2010 **Second Place, Smart Car Race, India**
Freescale Semiconductor Inc.

INTERESTS

AI: Machine Learning, Deep Learning, Computer Vision, Object (detection, segmentation, and pose estimation)

Robotics: Kinematics, Dynamics & Control, Trajectory Generation, Grasping & Manipulation, Motion Planning, SLAM, Human-Robot Interaction

SKILLS

Systems: Ubuntu, Windows, MacOS

Robots: Fetch, UR5, HRP2, Puli Rover, Seekur Jr.

Languages: Python, C/C++, MATLAB, HTML, CSS

AI Tools: TensorFlow, PyTorch, Scikit-learn, OpenCV

Robotic Tools: ROS, MoveIt, Gazebo, V-REP

Cloud Tools: Colab, Kaggle, AWS-EC2, Docker, Git

Embedded Hw.: PIC 18F/4011/24F, ATMega 8/16/32/128

Automotive System: LIN, CAN, MOST, FlexRay

Misc: Unreal Engine4, Unity-VR, LabVIEW, Altium, LaTeX

EDUCATION

2016 – 2019 **Doctor of Philosophy (Ph.D)**
Robotics
Université de Montpellier, France

2013 – 2015 **Master of Science (M.Sc)**
Automatic Control and Robotics
Politechnika Warszawska, Poland

2008 – 2012 **Bachelor of Technology (B.Tech)**
Electronics and Instrumentation
VIT University, India

PUBLICATIONS

Ashesh Vasalya. Human and humanoid robot co-workers: motor contagions and whole-body handover. ***Doctoral Dissertation'19***.

Ashesh Vasalya, G. Ganesh, A. Kheddar. Distinct motor contagions during and after observation of actions by a humanoid co-worker. *RO-MAN'18*.

Ashesh Vasalya, G. Ganesh, A. Kheddar. More than just co-workers: presence of humanoid robot co-worker influences human performance. *PLOS ONE'18*.

Ashesh Vasalya, K. Ganesan. In-lab in-vehicular infotainment system design using MOST25 protocol. *Recent Science, IJAT'14*.