

# 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 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.

### Brigosha Technologies, India

Support Engineer

Nov 2012 – March 2013 (FT)

Developed embedded systems (circuit boards, firmware) related to the design of a quadcopter.

## 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:** UR5, HRP2-Kai, Puli Rover, Seekur Jr.

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

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

**Robotic Tools:** ROS, V-REP, MoveIt, Gazebo, Git, UE4

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

**Automotive Bus Sys.:** LIN, CAN, MOST, FlexRay

**Misc:** L<sup>A</sup>T<sub>E</sub>X, AWS EC2, Docker, LabVIEW, Altium

## 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.