# Debasmita Ghose

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## Education

**Yale University**
*Doctor of Philosophy - Computer Science* *2019–present*
**Relevant Courses:** Intelligent Robotics, Building Interactive Machines, Natural Language Processing, Deep Learning

**University of Massachusetts, Amherst** **CGPA: 3.86/4.0**
*Master of Science - Computer Science* *2017–2019*
**Relevant Courses:** Robotics, Computer Vision, Machine Learning, Mobile and Ubiquitous Computing, Advanced Algorithms

**Manipal Institute of Technology, Manipal, India** **CGPA: 9.07/10.0**
*Bachelor of Technology - Electronics and Communication Engineering* *2013–2017*
**Relevant Courses:** Advanced Embedded Systems Design, Control Systems, Building Automation Systems

## Experience

**Yale University** **New Haven, CT**
*Graduate Research Assistant* *September 2019 - Present*
***Yale Social Robotics Lab***(*Advisor: Brian Scassellati*)
- Building a framework for robot learning a skill from human expert, demonstrating the learnt skill and teaching the skill to a novice human, in the context of a robot xylophone player.
- Implementing a binary classifier to distinguish between natural audio and audio played from an electronic device.
- Exploring division of labor between human and robots in the context of recycling sorting industry.

**College of Computer and Information Sciences, UMass Amherst** **Amherst, MA**
*Research Assistant* *September 2018 - August 2019*
***Laboratory of Perceptual Robotics*** (*Advisor: Rod Grupen*)
- Implemented a Bi-Directional LSTM to compensate for the effect of gravity, inertia and drift on a tactile sensor.
- Worked on the development of a new humanoid robot platform - uBot7

***Information Fusion Lab*** (*Advisors: Madalina Fiterau, Tauhidur Rahman*)
- Performed **object detection**, on thermal image datasets to detect people in the scene using Faster R-CNN.
- Integrated saliency detection with pedestrian detection to improve the performance of object detection networks on thermal images captured during the day.
- Created the first of its kind multimodal salient pedestrian dataset from the KAIST Multimodal Pedestrian Dataset.

**Siemens Corporate Technology** **Munich, Germany**
*Robotics Research Intern* *June 2018 - August 2018*
Used **Robot Operating System (ROS)** on the Siemens humanoid to implement :
- **Follow Me** - Used a trained leg detector and a laser scanner to detect the nearest pair of legs, and follow them
- **Pick and Place** - Implemented a grasp planner for a bi-manual pick and place task .

**Nanyang Technological University** **Singapore**
*Research Assistant (Advisor: Thambipillai Srikanthan)* *January 2017 - June 2017*
Implemented **machine learning** techniques for developing a system that can detect the mode of transportation used by a person using time sequenced location data retrieved from his cellphone with an accuracy of about 90%

**Technical University of Dresden** **Dresden, Germany**
*Undergraduate Summer Research Intern* *May 2016 - August 2016*
Built an **octo-copter** which was capable of stable flying and taking off and landing autonomously.

## Skills

- **Languages:** Python, C, C++, MATLAB, C#, VHDL
- **Frameworks:** ROS, Keras, TensorFlow, PyTorch, Git, OpenCV
- **Tools:** Moveit!, Gazebo, Eagle, ORCAD, PSpice, Simulink, Xilinx

## Publications

### In Submission

- **Debasmita Ghose***, Tim Adamson*, Shannon Yasuda, Michal Lewkowicz, Joyce Duan, Lucas Shepard, Brian Scassellati (2021), Watch One, Do One, Teach One: A Novel Framework to Evaluate Robot Learning, In *Proceedings of the the Sixteenth ACM/IEEE International Conference on Human Robot Interaction (HRI 2021)*

### Peer Reviewed Conferences

- Dr. Mohan Kumar J, Rishabh Mahajan, Deeksha Prabhu, **Debasmita Ghose** (2016), Cost Effective Road Accident Prevention System, In *Proceedings of the IEEE International Conference for Contemporary Computing and Informatics (IC3I), Noida, India.*

### Peer Reviewed Workshops

- **Debasmita Ghose***, Shasvat M. Desai*, Sneha Bhattacharya*, Deep Chakraborty*, Madalina Fiterau, Tauhidur Rahman (2019), Pedestrian Detection in Thermal Images using Saliency Maps, In *Proceedings of the IEEE Workshop on Perception Beyond the Visible Spectrum, Computer Vision and Pattern Recognition (CVPR), Long Beach, California.*

*Authors Contributed Equally

## Mentoring

- **Joyce Duan**, Undergraduate - Yale University *(Senior Computer Science Thesis Project)*
- **Shannon Yasuda**, Undergraduate - Yale University
- **Lucas Shepard**, Undergraduate - Yale University
- **Michal Lewkowicz**, Undergraduate - Yale University
- **Sarim Ahmad**, Undergraduate - UMass Amherst

## Achievements

- **DAAD RISE Professional Scholarship:** Received the RISE Professional Scholarship 2018 from the German Academic Exchange Service for a research internship with Siemens AG, Munich,Germany
- **Best Outgoing Student:** Conferred with the Best Outgoing Student of the 2013-2017 batch of 240 students, by the Department of Electronics and Communication Engineering, Manipal Institute of Technology, Manipal
- **Theme Winner:** Internet of Things and Intelligent Systems at Intel India Embedded Challenge – 2014 for building Amphibious Rescue and Surveillance Robot – a Modern Hovercraft among 2000 teams