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, Information Theory

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 on a pre-defined map of the room
  - **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, Docker
- **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), Why we should build robots that both teach and learn, 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

Refereeing for Conferences

ACM/IEEE International Conference on Human-Robot Interaction (HRI) **2021**
Special Mention for Outstanding Review

IEEE-RAS International Conference on Humanoid Robots **2019**

Teaching Experience

Building Interactive Machines **Yale University**
Teaching Fellow *Fall 2020*
Covers topics in Robotics, Reinforcement Learning, Computer Vision and Human Computer Interaction

Artificial Intelligence **Yale University**
Teaching Fellow *Spring 2021*
Covers topics in knowledge representation, predicate calculus, temporal reasoning, vision, robotics, planning, and learning

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 class of 2017 comprising 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