Contact: +1-(413)-404-2879
dghose@umass.edu

DEBASMITA GHOSE

EDUCATION

UNIVERSITY OF MASSACHUSETTS, AMHERST *2017-2019*
School of Computer and Information Sciences – Master of Science **CGPA** – 3.76/ 4
Relevant Courses: Robotics, Computer Vision, Intelligent Visual Computing, Machine Learning, Modern Computer Architecture, Mobile and Ubiquitous Computing

MANIPAL INSTITUTE OF TECHNOLOGY *2013-2017*
Department of Electronics and Communication Technology – Bachelor of Technology **CGPA** – 9.07/ 10
Relevant Courses: Embedded Systems Design, Advanced Embedded Systems Design, Control Systems, Building Automation Systems

INTERNSHIPS & TRAININGS

Nanyang Technological University, Singapore January, 2017 – June, 2017
Research Assistant, School of Computer Science and Engineering

Techniche Universitat Dresden, Germany May, 2016 – August, 2016
Visiting Researcher, School of Vehicle Mechatronics

Hewlett Packard (HP) Education Services May, 2015 – June, 2015
Industrial Training: VLSI, VHDL and PCB Design

Indian Institute of Technology, Patna (IIT, Patna) May, 2015
Short Term Course: FPGA Based System Design

ACHIEVEMENTS

- **Best Outgoing Student:** Conferred with the Chaya Devi Award for 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
- **Winner:** INK Makers – Make-a-Thon, 2016 an innovation challenge conducted by INK Talks for building a Braille Reader among 20 teams
- **Best Research Poster – Technical** at Indo German Convention of Lindau Alumni, Kasturba Medical College, Manipal among 40 teams
- **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
- **Best Project** in Winter Project Competition 2014 -2015 conducted by Institute of Engineers, Electronics and Communication Engineering (Manipal Chapter) for building Amphibious Rescue and Surveillance Robot – a Modern Hovercraft among 50 teams

PUBLICATIONS

- **Cost Effective Road Accident Prevention System**, *Dr. Mohan Kumar J, Rishabh Mahajan, Deeksha Prabhu, Debasmita Ghose*, IEEE International Conference for Contemporary Computing and Informatics, Noida, India, 2016
- **Safety Mechanism in Treadmills using a Heart Rate Sensor,** *Debasmita Ghose, Vandana Prasad, Ankita Singh*, International Research Journal of Engineering and Technology, Volume 3, Issue 5, May 2016
- **A Modern Approach to Energy Generation and Conservation using Rain Water,** *Rishabh Mahajan, Debasmita Ghose, Deeksha Prabhu,* 8th National Conference on Advances in Energy Conversion Technologies, 2016 conducted by Manipal Institute of Technology, India (presentation)
- **Planning a Smart City in an Indian Context: A Case Study of Patna U.A., Bihar,** *Debasmita Ghose, Dr. Debjani Sarkar Ghose*, National Seminar on Development and Management of Urban Infrastructure in India: Growth, Constraints and Prospects, 2016 at Patna Women's College, Patna, India

PROJECTS

AUTOMATED SPORTS VIDEO HIGHLIGHT GENERATION

- Implemented a 3D Convolutional Neural Network using the Keras/TensorFlow framework to analyze the excitement levels of audience watching a game to classify parts of the video into “Highlight” and “Standard Gameplay” with an accuracy of about 70%

DETERMINATION OF TRANSPORTATION MODES USING MOBILE PHONES

- Implemented various methods for developing a system that can detect the mode of transportation used by a person using the time sequenced location data retrieved from his cellphone, while he takes multimodal trips using various machine learning techniques with an accuracy of about 90%.
- This project was implemented during a 5 month Research Assistantship at Hardware and Embedded Systems Lab, School of Computer Science and Engineering, **Nanyang Technological University, Singapore**.

DRONE TO ASSIST THE PARKING OF A CAR

- Developed a semi-autonomous octocopter to assist a driver in finding a parking spot.
- Designed an octocopter which was capable of stable flying and taking off and landing autonomously.
- Done as a part of an internship at the School of Vehicle Mechatronics, **Techniche Universitat, Dresden, Germany.**

ROAD ACCIDENT PREVENTION SYSTEM

- Designed a system to detect driver drowsiness, check if the driver is under the influence of alcohol, if he has fastened the seat belt and if he is tailgating someone or being tailgated by someone.
- Developed a system to alert the driver by means of an audio stimulus, if found to violate traffic rules and if needed, send the details of the car to the nearest police station for further action.
- Our team of 3 was selected among the top 10 teams of **Atmel Embedded Design Challenge 2016** for this project.

AMPHIBIOUS RESCUE AND SURVEILLANCE ROBOT: A MODERN HOVERCRAFT

- Designed and built a vehicle capable of traversing autonomously to inaccessible locations and perform live environmental monitoring.
- Developed a system to transmit real time video feed from this vehicle to a ground station to assist the rescue teams
- This project was awarded as the best project at the **Intel India Embedded Challenge, 2014** in the category Internet of Things and Intelligent Systems.

CARGO ALIGNING ROBOT USING FIREBIRD V ROBOTICS RESEARCH PLATFORM

- Programmed the FireBird V Research Platform to act as a cargo aligning robot, which could traverse a grid of points in a path autonomously avoiding obstacles.
- Designed and built a robotic arm to pick up, turn and drop cargo blocks.
- This project was a part of the e-Yantra National Robotics Competition conducted by **Indian Institute of Technology, Bombay.**