

SOUMYADEEP MUKHERJEE

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D-128 Rajendra Prasad Hall, IIT Kharagpur ◇ West Bengal 721302

EDUCATION

Indian Institute of Technology, Kharagpur

July 2016

Dual Degree in Chemical Engineering

Overall GPA(8 Semesters): 6.98

Cambridge School Noida, Uttar Pradesh

CBSE Grade 12 Exam - 91.6 %

July 2011

CBSE Grade 10 Exam - 94.33 %

July 2009

PUBLICATIONS

System Design for an Automatic Gait Selecting Low-Cost Wheel-Leg Hybrid Robot *Soumyadeep Mukherjee et. al. Submitted in IEEE International Conference of Robotics and Automation 2016*

RESEARCH EXPERIENCE

Moving Baseline Stereo for Fisheye cameras

May - July 15'

Research Assistant

Max Planck Institute of Biological Cybernetics, Germany

- Advised by Dr. Aamir Ahmad, I developed a stereo-imaging from fish-eye camera using plane-sweep stereo and am currently working on shifting this into a variable moving baseline using robot poses. I assembled multiple aerial robots and mounted odroids for on-board processing. I also developed a ROS Wrapper for ARM Boards for Basler Ace USB 3.0 Camera and designed Camera Holder Parts which were 3D printed.

Vision Based Pedestrian Tracking for ADAS

May - July '14

Research Assistant

Nanyang Technological University, Singapore

- Advised by Prof. Lam Siew Ki, I developed a kalman-filter based multiple pedestrian tracker for Advanced Driver Assistance System from moving camera feed estimating the ego-motion using computer vision techniques. I Increased detection speed using tracking data by reducing the search area for detection.

Autonomous Soccer Playing Robots

March '12 - November '14

Student Coordinator & AI Team Member

Department of Computer Science and Engineering, IIT Kharagpur

- Advised by Prof. Jayanta Mukhopadhyay, I contibuted to designing the strategy for 5 vs 5 differential drive robots playing soccer using a 3-tier software architecture for making decisions during the game. I had also developed the vision module for detection and tracking of position & orientation robots from over-head camera. Currently, I am designing and maintaing the ROS based software architecture for the same.

Decentralised Terrain Exploration with Robot Swarms

January '15 - Present

Researcher

Department of Computer Science and Engineering ,IIT Kharagpur

- Advised by Prof. Pallab Dasgupta, I Initiated one of the few swarm robotics research groups in India. I am working on developing and implementing an algorithm using algebraic topology to cover maximum sensor coverage using decentralised system of robots.

ACHIEVEMENTS & AWARDS

Campus Winners of Goldman Sachs Quantify 2015 by solving three real world problems on Algorithms, Quant and ML.

Selected for **KVPY** (Kishore Vaigyanik Prasar Yojana) Scholarship in 2011.

Qualified for **ACM ICPC Regional Finals 2013**.

Qualified for **Semi-Finals of Google Cloud Developers Challenge 2013**.

Secured **AIR 19** in National Cyber Olympiad 2011, **AIR 6** in Heritage India Quiz organized by CBSE and ranked in **top 1%** in Uttar Pradesh in National Standard Examination for Chemistry organized by Homi Bhabha Research Centre.

Scored **2400 in SAT II** (Physics, Chemistry and Mathematics) **325 in GRE** and **108 in TOEFL**.

POSITIONS OF RESPONSIBILITY

Governor

Technology Robotix Society

August 2014 - Present

www.robotix.in

- Held **highest student position in TRS**; supervised a team of 50 students in promoting robotics across IIT Kharagpur and India Initiated three long-term robotics projects mentored by professors of different departments obtaining total funding of **INR 85,00,000** as part of Centre for Excellence in Robotics. Obtained **certification from IEEE** student branch of IIT Kharagpur and equipment support from **Texas Instruments** for conducting winter workshop in December 2014 and **Initiated Kharagpur Robotics and Intelligence Seminar Series (KRISSE)** for open discussions on robotics among students of IIT Kharagpur.

Student Coordinator

Kharagpur Robosoccer Students Group

April 2014 to Present

www.krssg.in

- Led the contingent of IIT Kharagpur to participate in **FIRA World Cup Malaysia 2013 and Beijing 2014** for Simurosot and Mirosoot League. Obtained and managed a grant of **INR 35,00,000** and organized in-house first ever AI event Code-o-Soccer which saw a participation of 200 students.

EXTRA-CURRICULAR

Enjoy writing and working towards developing a wiki for IIT Kharagpur - Metakgp.

Part of English Dramatics Society and have staged and directed multiple plays.

Played Basketball for district and am part of Inter-Hall basketball team.

Enjoy adventure sports including Skuba diving, para-gliding, para-sailing, river rafting and mountaineering.

TECHNICAL STRENGTHS

Relevant Coursework

Undergraduate: Algorithms, Machine Learning, Optimization Techniques

Computer Languages

On-line: Computer Vision, AI, Computer Networks

Proficient: C, C++, Python, L^AT_EX, Bash

Familiar: Java, Javascript, jQuery, SQL, C#

Web-Development

Django, PHP, Codeigniter, CSS, HTML

Softwares & APIs

ROS, Gazebo, OpenCV, MATLAB, Simulink, SolidWorks, Android SDK

Embedded Systems

AVR, Arduino, Beagleboard, Odroid