SOUMYADEEP MUKHERJEE

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EDUCATION

Indian Institute of Technology, Kharagpur *July 2016*
Dual Degree in Chemical Engineering
Overall GPA: 7.0

Cambridge School Noida, Uttar Pradesh
CBSE Grade 12 Exam - 91.6 % *July 2011*
CBSE Grade 10 Exam - 94.33 % *July 2009*

RESEARCH EXPERIENCE

Vision Based Pedestrian Tracking for ADAS May 2014 - July 2014
Research Assistant *Nanyang Technological University, Singapore*

· 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.
· Increased detection speed using tracking data by reducing the search area for detection.

Autonomous Soccer Playing Robots March 2012 - November 2014
Student Coordinator & AI Team Member *Department of Computer Science and Engineering,IIT Kharagpur*

· Designed the strategy for 5 vs 5 differential drive robots playing soccer using a 3-tier software architecture for making decisions during the game.
· Developed the vision module for detection and tracking of position & orientation robots from over-head camera.
· Led the team to represent IIT Kharagpur in FIRA Roboworld Cup Malaysia 2013 and Beijing 2014.

Ad-Robo October 2014 - Present
Researcher *Technology Robotix Society ,IIT Kharagpur*

· Designing an indoor localization system using triangulation and wifi-Fingerprinting techniques along with IMU Data.
· Conceptualized and ideation of a system of personalized advertising system for indoor spaces using head pose estimation from CCTV footage, indoor location and social media data of users.

Decentralised Terrain Exploration with Robot Swarms October 2014 - Present
Researcher *Department of Computer Science and Engineering ,IIT Kharagpur*

· Initiated one of the few swarm robotics research groups in India.
· Developing a relative localization for multiple robots using custom-made IR sensor beacons on Gazebo simulator which will be implemented in real life robots which would patrol a bounded area with obstacles.

SOFTWARE DEVELOPMENT EXPERIENCE

Relative Attribute Feedback November 2014
Machine Learning Course Project

· Developed a relative attribute based search using Yahoo shoe images database that could improve search from user feedback on the basis of four attributes.

Automated Image Mosaicing of Torn Paper Documents March 2014
Inter-Hall Open Soft

· Implemented one of the multiple tested algorithms for a software called Mosaiq that could stitch scanned torn paper pieces into a complete or partial document.

Citation Analyser   March 2013
Inter-Hall Open Soft

· Contributed in developing a software called Erudito which could search research papers, journals and authors from all on-line sources and would also give the feature of taking notes and downloading them. .

ACHIEVEMENTS & AWARDS

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 **All India Rank 19** in National Cyber Olympiad 2011.

Scored **2400 in SAT II** (Physics, Chemistry and Mathematics).

Won multiple image processing robotics events in colleges IIT BHU, IIT Kharagpur, BITS Pilani, IIT Bombay.

Designed and tested the problems for code.sh, an event during Bitwise, annual fest of department of computer science and engineering, IIT Kharagpur hosted on hackerrank.com.

Supervised in development of content and design of the website for Centre For Robotics Research in IIT Kharagpur.

POSITIONS OF RESPONSIBILITY

Governor   August 2014 - Present
Technology Robotix Society   *www.robotix.in*

· 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.
· **Initiated Kharagpur Robotics and Intelligence Seminar Series** (KRISS) for open discussions on robotics among students of IIT Kharagpur.

Student Coordinator   April 2014 to Present
Kharagpur Robosoccer Students Group   *www.krssg.in*

· Led the contingent of IIT Kharagpur to participate in **FIRA World Cup Malaysia 2013 and Beijing 2014** for Simurosot and Mirosot 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.

TECHNICAL STRENGTHS

Relevant Coursework	**Undergraduate**: Algorithms, Machine Learning, Optimization Techniques
	On-line: Computer Vision, Cryptography I, AI, Computer Networks
Computer Languages	**Proficient**: C, C++, Python, LaTeX, 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