

SOURISH GHOSH

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EDUCATION

Indian Institute of Technology,
Kharagpur

July, 2014 - April, 2019
(*expected*)

Integrated M.Sc.
Junior Undergraduate
Department: Mathematics
Major: Mathematics and Computing
CGPA: 8.72/10

Garden High School, Kolkata

April, 2012 - February, 2014

Indian School Certificate Board
Aggregate: 94%

RESEARCH EXPERIENCE

University of Massachusetts, Amherst

May, 2016 - August, 2016

Summer Intern, Autonomous Mobile Robotics Lab

Topic: local obstacle avoidance of outdoor mobile robots using stereo RGB cameras (*paper in progress*)

Research areas: mobile robotics, stereo vision, epipolar geometry

Advisor: [Dr. Joydeep Biswas](#)

Repository: <https://github.com/sourishg/jackal-navigation>

Kharagpur RoboSoccer Students' Group, IIT Kharagpur

February, 2015 - April, 2016

Software Team Member

Implemented motion planning algorithms for RoboCup Small Sized League and MiroSot, FIRA. Bronze winning team member at MiroSot, FIRA 2015.

Research areas: multi-agent robot systems, robot soccer, motion planning

Advisor: [Dr. Jayanta Mukhopadhyay](#)

RESPONSIBILITIES

Technology Robotix Society, IIT Kharagpur

February, 2016 - *present*

Head

I am responsible for designing a computer vision event to be held at *Kshitij 2017*, Asia's largest techno-management fest. I help conduct technical workshops across India to spread the culture of robotics. Also I organize weekly lectures on manual and autonomous robotics for over 300 students round the year along with workshops and hackathons. I lead a three-tier team to successful planning and execution of all these events.

IEEE Robotics Winter Workshop, IIT Kharagpur

December, 2015

Image Processing Mentor

I conducted a week-long workshop for first and second year undergraduates at IIT Kharagpur. I taught basic image processing using OpenCV and C++, and micro-controller programming using an Arduino UNO board. As a final project of the workshop I helped the students build a simple object tracking differential drive robot.

PROJECTS

Autonomous Campus Bot

Currently working on an autonomous outdoor vehicle capable of moving autonomously using vision and GPS.

RRT Simulator

Developed an interactive GUI interface to simulate a path generated by RRTs avoiding obstacles using C++ and Qt.

Repository: <https://github.com/sourishg/rrt-simulator>

Stereo Camera Calibration Tools

Developed some tools for the calibration of stereo cameras using the checker-board method using C++ and OpenCV for both pinhole model and fisheye model lenses.

Pinhole Model: <https://github.com/sourishg/stereo-calibration>

Fisheye Model: <https://github.com/sourishg/fisheye-stereo-calibration>

Soft Computing Term Project

Developed an Android application that determines the lifestyle of a person. A fuzzy logic based approach was used to generate an analysis of how a person spends his/her day based on his/her phone's GPS data and how much time he/she spent at a particular location. Peer reviewed to be the best term project for Spring 2016.

Paper in progress.

Advisor: [Dr. Sudhir Kumar Barai](#)

Repository: <https://github.com/nishnik/YOLO>

code.fun.do, Mircrosoft Hackathon

Developed a mobile game for Windows Phone using C# and XAML. The idea of the game is to stop incoming missiles by tapping on them, before they reach their target.

Repository: <https://github.com/sourishg/saving-private-ryan>

AWARDS AND ACHIEVEMENTS

MiroSot, FIRA

July, 2015

MiroSot is an international five-a-side robot soccer tournament. I was a part of the bronze-winning team of IIT Kharagpur.

Best Term Project, Soft Computing Course

Spring, 2016

Designed a mobile application that tracks the daily lifestyle of a person. Peer reviewed as the best project.

INSPIRE Scholarship Recipient

July, 2014 - *present*

A prestigious scholarship awarded by the Government of India to the top 0.07% students who appeared for the JEE Advanced examination in India, and pursuing a career in Science.

SudoCode, Kshitij 2015

January, 2015

Participated in an online coding competition at *Kshitij 2015*, Asia's largest techno-management fest. Awarded the best fresher at IIT Kharagpur.

Best Fresher, HackerEarth Freshers' Challenge, IIT Kharagpur

October, 2014

Finished first amongst all first years in an ACM-ICPC style coding contest organised by HackerEarth.

Inter IIT Sports Meet

December, 2014

Represented IIT Kharagpur in table tennis and secured the bronze medal.

Table Tennis State Championship, West Bengal

November, 2010

Member of South 24 PGS District silver winning table tennis team.

COURSEWORK

IIT Kharagpur

Completed

Partial Differential Equations
Transform Calculus
Probability and Statistics
Discrete Mathematics
Design and Analysis of Algorithms
Programming and Data Structures
Soft Computing
Basic Electronics

Ongoing

Computer Organization and Architecture
Object Oriented Systems Design
Linear Algebra
Real Analysis
Mathematical Methods

Additional Courses

Completed

Machine Learning (Coursera)
Introduction to Computer Vision (Udacity)

Ongoing

Deep Learning (Udacity)
Artificial Intelligence for Robotics (Udacity)

SKILLS

Programming

C, C++, Java, Python, L^AT_EX

Libraries and Tools

OpenCV, ROS, GNU Octave, AndroidSDK

Kharagpur, September 26, 2016