



Aritra Mukherjee

PhD in Engineering
Master of Engineering, Bachelor of Technology

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Area of Interest

my preferred area of work,
though not restricted to

Computer Vision, specially development of systems and algorithms for faster and more intelligent robot vision.

Human Computer Interaction, development of autonomous smart systems with more humane interaction properties.

Present Position

what I am doing right now
as a full timer

Currently I am an Assistant Professor at Dept. of Computer Science and Information Systems, BITS Pilani Hyderabad Campus

Education

my graduate and post
graduate education details

2016 – 2020, PhD (Engineering) from Dept. of CSE, Jadavpur University, Kolkata, India. Thesis - "Design of Real-Time System for SLAM and Semantic Mapping" under Prof. Sanjoy Kumar Saha, Dept. of CSE.

2013 – 2015, Master of Computer Science and Engineering from Jadavpur University, Kolkata, India. CGPA – 9.0/10. ME thesis - "Object Localization and Image Representation by Knowledge Graph", under Prof. Mita Nasipuri, Dept. of CSE.

2007 – 2011, Bachelor of Technology in Computer Science and Engineering from Govt. College of Engineering and Textile Technology, Serampore under West Bengal University of Technology. DGPA – 8.69/10 CGPA – 8.72/10

Publication, Presentation

list of works selected,
communicated, published
and presented by me so far

"Learning Deep Representations for Place Recognition in SLAM" by Aritra Mukherjee, Satyaki Chakraborty and Sanjoy Kumar Saha, PREMI 2017

"Segmentation of Natural Image Based on Colour Cohesion and Spatial Criteria" by Aritra Mukherjee, Soumik Sarkar and Sanjoy Kumar Saha, ICAPR 2017

"Fast Geometric Surface based Segmentation of Point Cloud from Lidar Data" by Aritra Mukherjee, Sourya Dipta Das, Jasorsi Ghosh, Ananda S. Chowdhury and Sanjoy Kumar Saha, PREMI 2019

"Detection of Loop Closure in SLAM: A DeconvNet Based Approach" by Aritra Mukherjee, Satyaki Chakraborty and Sanjoy Kumar Saha, Applied Soft Computing Journal 80 (2019) pp. 650-656

"Segmentation of Natural Images Based on Superpixel and Graph Merging" by Aritra Mukherjee, Soumik Sarkar and Sanjoy Kumar Saha, accepted, IET Computer Vision, DOI- 10.1049/cvi2.12008

"Object Mapping from Disparity Map by Fast Clustering" by Aritra Mukherjee, Soumik Sarkar and Sanjoy Kumar Saha, CALCON 2020

"Two Stage Semantic Segmentation by SEEDS and Fork Net" by Aritra Mukherjee, Prithwish Jana, Sayak Chakraborty, Sanjoy Kumar Saha, CALCON 2020

"Semantic Segmentation of Surface from Lidar Point Cloud" by Aritra Mukherjee, Sourya Dipta Das, Jasorsi Ghosh, Ananda S. Chowdhury and Sanjoy Kumar Saha, accepted at Multimedia Tools and Applications, DOI- 10.1007/s11042-020-09841-2

Skill Set

set of skills relevant to CSE, I have acquired over my career, I'm more confident in the ones typed in bold

Software

| | |
|------------|--|
| Coding | C, C++ , Java, python |
| Technology | OpenCV , ROS, CUDA, Android , OpenGL, Qt, PCL, Theano, Tensorflow, PyTorch , Caffe, Keras |
| Web Tech | PHP, MySQL, JQuery, HTML5, CSS3, NoSQL |
| OS | Linux , Mac, Windows |

Hardware

Designing and Implementing circuits with specific application (analog and digital), microcontroller based embedded systems etc. along with relevant software, worked with **arduino** and zigbee
Designing and implementing small robots of types: Autonomous rover, small humanoid, Quadraped, Quadrotor

Work Experience

my corporate and academic work experience details

| | |
|------------------|--|
| Feb'22 - present | Assistant professor, Dept. of CSIS, BITS Pilani Hyderabad Campus |
| Apr'21 - Jan'22 | Assistant professor, Dept. of CSE (AI & ML), Techno Main Salt Lake |
| Oct'20 - Mar'21 | Visiting Scientist at ECSU group, Indian Statistical Institute, Kolkata. My project was related to word spotting on ancient documents in Indian languages and fronto-parallel re-projection of high resolution images for digital restoration |
| Dec'15 - Sep'20 | Project fellow under department of Mechanical Engineering, Jadavpur University. My project was to develop the robot vision module for an all terrain, electro-hydraulically actuated quadruped robot for military logistics. The project was funded by CAIR, DRDO. |
| Jul'14 - Jun'15 | Teaching assistant at Jadavpur University for Lab sessions to under graduates in Computer Graphics (5th semester) and Basic Programming (2nd semester) |
| Sep'12 - Apr'13 | Freelance Android app developer |
| Jul'11 - Aug'12 | Worked for YottoLabs Pvt. Ltd. (a start-up based in Bangalore, India) as Software Researcher and Developer in the field of Android App development. |

Projects

major and minor projects, I have worked on till now

Development of Navigation Module for a electro-hydraulic quadruped robot for CAIR, DRDO. Designing of stereo vision and Lidar vision algorithms for environment mapping and higher level path planning, along with foot-tip trajectory planning based on terrain map.

Developed the android app "Japin" available on Google play store. It is a micro social media app for image sharing with filters, fuzzy like, medals and disappearing posts.

Full stack development of INCOM 2018 website and portal, for 1st International Conference on Mechanical Engineering by Dept. of Mechanical engineering, Jadavpur University.

Intelligent Scene Interpretation (PostGraduate thesis project) – A computer vision system that can receive a natural scene as input and compute the corresponding knowledge graph where the nodes are recognized objects in the image and the edges in between are contextual inter-relationships.

Stewot - A wireless interactive android based digital menu for hospitality industry, I was majorly responsible for designing and coding the android client end app, involving elements like cloud sync, direct printing with WiFi and various other advanced features with all available hardware of a smart-phone /tablet.

UnderGraduate Final Year Project – WALL-I (Warehouse Automated Lifter Loader, Image guided) a rover with differential drive and single point vision and 1 DOF lifter to perform lifting, loading, stacking, palletizing etc. jobs. I was personally involved with the designing of the mechanical and electronics portion with supportive role in software portion.

Summer Training Project – Digital IC Tester with IC database in a PC. The hardware was based on 8051 microcontroller which communicated with the PC application built on VB and MS Access, through com-port.

Continuing Study Project – Add On Touch Screen System (an approach for making robust and cost effective retro fixable touch screen for larger VDU's) based on scalable tangential IR grid over display surface.

Test Scores

my scores in some significant competitive exams

GATE 2013 CS score – 660(old formula) 715(new formula) All India Rank – 595 among 2,24,160 appearing candidates in CS paper, percentile – 99.73

GRE – 313/340 (Quantitative Aptitude - 161/170, Verbal Aptitude - 152/170) AWA – 3.5/6

TOEFL – 105/120 (Reading – 28/30, Listening – 26/30, Speaking – 26/30, Writing – 25/30)

Other Achievements

awards and achievements earned by me.

Participated and qualified for semi-final round at Techtop 2010 organized by IEEE, IRDC, Intel

College Champion for “Tycoons 2008”, organized by jagoindia.org and Career launcher on January 2008

2nd position holder on Prof S N Bose Birth Centenary Annual competition on Mathematics organized by Calcutta Mathematical Society on 7th September 2006

Won Honorary Mention at Essay Competition on “Most Important Milestone on 20th Century Physics” organized by IUCAA Reference center Jadavpur University on 31st December 2005

Personal Details

my non-academic details

Date of Birth | 16th Jan, 1989

Status | Male, Indian

Languages known | English, Bengali, Hindi

Address | 89/26, Bangur 2nd Lane
Rishra, Dist-Hooghly
West Bengal, India
pin- 712248

Signature

commitment to all information furnished above

