SATYAM MOHLA

AI · DIGITAL TRANSFORMATION · DATA STRATEGY · AI POLICY & ETHICS

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EDUCATION

Bachelor & Master of Technology · 2015-2020

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY · IIT Bombay MCM Scholarship (2015-19) · Dept. Valedictory Award
Major in Electrical Engineering (AI & Computer Vision) with minor in IEOR · GPA: 9.27 · 3 AP Grades
· **Master's Thesis:** Applied Attention methods for Multimodal Image Fusion. [URA03]
· **Bachelor's Project:** Low-cost Biomedical Devices. [URA01]

Exchange Semester

NTU SINGAPORE & NANYANG BUSINESS SCHOOL · 08/18-12/18
Temasek Scholar · Coursework in Finance & AI · Volunteering at Singapore SNPG & IMH · Editor-in-Chief.

Schooling

KENDRIYA VIDYALAYA, NOIDA · *Class X: 10.0/10.0 CGPA · CLASS XII: 91.6%*

SELECT PUBLICATIONS & PATENTS

Computer Vision, AI for Social Good, AI Policy & Ethics

PUBLICATIONS

1. ***Teaching CNNs to mimic Human Visual Cognitive Process Regularise Texture-Shape Bias***, Mohla S., Nasery A., Banerjee B., ICASSP, Singapore 2022 *[Accepted]*
2. ***Buildings look like Polygons: Multimodal Footprint Segmentation using Generated Shape Cue Fusion***, Mohla S., Mohla S., Bose S., Guha A., Banerjee B., Nature Machine Intelligence *[Submitted]*
3. ***Socio-Economic impact of public use cases of NLP systems: A critical analysis***, Mohla S., Guha A., Nature Machine Intelligence *[Submitted]*
4. ***Multimodal Noisy Segmentation based fragmented burn scars identification in Amazon Rainforest***, Mohla S., Mohla S., Guha A., Banerjee B., IEEE SMC, Toronto'20 *[Microsoft AI4Earth Grant, IEEE SMC Travel Grant]*
5. ***A Material Lens to Investigate the Gendered Impact of the AI Industry***, Mohla S., Bagh B. & Guha A., IJCAI Workshop on AI for Social Good, Yokohama'21
6. ***FusAtNet:Dual Attention based SpectroSpatial Multimodal Fusion Network for Hyperspectral and LiDAR Classification***, Mohla S., Pande S., Banerjee B.& Chaudhari S., IEEE CVPR, PBVS, Seattle'20 *[Shastri Fellow]*
7. ***CognitiveCNN: Mimicking Human Cognitive Models to resolve Texture-Shape Bias***, Mohla S., Nasery A., Banerjee B. & Chaudhari S., ICLR, BAICS, Addis Ababa'20 *[ICLR Conf. Grant]*

Low Cost Diagnostics Devices

8. ***Design of Point of Care Test & Optical Reader for Early Screening of Kidney Related Disorder***, Shivhare P., Mohla S. et al., IEEE NANOMED, Korea'19 *[IEEE Best Paper Finalist Award, Batch'88 Travel Grant]*
9. ***Design of Quantum Dots Infused Films & an Optical Reader for Measurement of Blood Electrolytes***, Shivhare P., Aliya S.,Mohla S., Uttam S. & Srivastava R., IEEE NMDC, Sweden'19

Patents

10. ***Point of Care Test & Optical Reader for Early Screening of Kidney Related Disorder***, Patents in filing, India
11. ***Quantum Dots Infused Films based Reader for Measurement of Blood Electrolytes***, Patents in filing, India

WORK EXPERIENCE

Digital Architect 20'-now

DIGITAL TRANSFORMATION SUPERVISORY GROUP, HONDA INNOVATION LAB, TOKYO
Reimagining internal business strategy around AI, Autonomous Vehicles & Data, collaborating with academia and Honda China & US Digital CX offices. I often work closely with business strategy, manufacturing/development & marketing units.

R&D Engineer 05/18-07/18

ADVANCED TECH RESEARCH DIVISION, SONY R&D, JAPAN
*Developed novel EDA sensing methods for next-gen **non-invasive wearables**, benchmarked with physiological human trials.*

01/20-now

AI ETHICS & POLICY LAB, CENTER FOR POLICY STUDIES, IITB, PROF. ANUPAM GUHA *[Publn.2,3,4,5]*
Analysing impact of AI based decision making & AI applications on society utilising ethical, poilcy & socio-economic lenses, besides computational methods. Also developing use cases for AI for social good, especially in disaster & forest management.

05/19-now

AI IMPACT LAB, CENTER FOR STUDIES IN RESOURCE ENGG, IITB, PROF. B BANERJEE *[Publn.2,4,6,7]*
Working on attention based computer vision algorithms for multimodal segmentation with varied applications in remote sensing, diagnostics, autonomous driving etc. Established collaboration with AI Policy Lab for AI in social good applications.

01/19-08/20

NANOBIOS LAB, DEPTT. OF BIOSCIENCES & BIO-ENGG, IITB, PROF. R SRIVASTAVA *[Publn.8,9,10,11]*
*Developed **point-of-care readers** with **20X cost reduction** to monitor Na+, K+, Alb. concn. in body fluids like urine.*

06/19-06/20

VISION & IMAGE PROCESSING(VIP) LAB, PROF. SUBHASIS CHAUDHURI *[Publn.6,7]*
Developed robust CNNs, inspired from cognitive psychology, to resolve long standing texture-shape bias problem in AI.

ACADEMIC LEADERSHIP & SERVICE

2020   PROGRAM COMMITTEE — IJCAI WORKSHOP ON AI FOR SOCIAL GOOD, IJCAI, YOKOHAMA 2021

2016-20   TEACHING ASSISTANT (6 TIMES) — ELECTRICAL, MATHS & PHYSICS DEPTT., IIT BOMBAY
· *TA 6 TIMES in 5 COURSES like Machine Learning, ODE etc. based on academic excellence & communication skills.*
· *Took tutorial sessions, prepared PSETs, graded exams & handled logistics in each course. Taught **300+ students** to date.*

2020-21   INVITED INDUSTRY SPEAKER—IITB-CEP EXECUTIVE EDUCATION PROGRAM
2020: *Deep learning for remote sensing;*   ***2021:*** *AIML with Python;*

2019-now   ACADEMIC REVIEWER *IEEE GRSL, Springer Supercomputing, IJCAI AI SocialGood, IEEE WACV Computer Vision*

2018-20   STUDENT VOLUNTEER — at various *AI conferences like ICML, ICLR etc.*

2020-now   TALKS — *at* CRCS AI FOR SOCIAL GOOD, *Harvard University, USA;* STEP REGIONAL DIALOGUE, *Singapore*

LEADERSHIP ROLES

Co-Founder — TECH FOR SOCIETY, SOCIAL INITIATIVE FOR LOW COST INNOVATION & TECHNOLOGICAL IMPACT [17'-20]
Led a team across many IITs to develop tech for diagnostics & water mgmnt in rural India. Also developed AI solutions for disaster mgmnt from satellite images. Awards/grants from ADI, Samsung, Microsoft, L&T etc., invited at GYLS'19, HongKong.

Division Head — MARS ROVER TEAM - RESEARCH & BIOSENSORS, IIT BOMBAY
Represented India at Intl. Robotics Competition URC'18. Led the team responsible for designing onboard sensor stack & scientific mission plan; featured in German Docufilm "Ein Ticket Zum Mond". Past as Sr.& Jr. Design Engineer. [16'-18]

Secretary — HOSTEL TECHNICAL COUNCIL *Vikings, IIT Bombay*

Asst. Manager — PUBLICITY & COMMUNICATION, TEAM SHUNYA *a student team building a solar sustainable house.*

INTERNATIONAL LEADERSHIP

India Lead · Core Organising Team · Emcee — HONDA ECOTECHNOLOGY FORUM, JAPAN │ "INTEGRATING SUSTAINABILITY INTO FUTURE URBAN DESIGN"
Among 12 scholars from 6 nations & 100+ awardees nominated to core team to organise forum. Undertook trips to Tokyo for venue selection, logistics & planning for estimated 500+ professionals. Due to covid, took adnl. roles and spearheaded virtual event transformation, the keynote speakers sessions, & EMCEEING the event live from Tokyo. [03/19-07/21]

Panelist — INTERNATIONAL SYMPOSIUM ON ECOTECHNOLOGIES, RUPP CAMBODIA, MOEYS MINISTRY & HOF [2019]
Panel discussion on "Achieving Eco-society by Govt-Academia-Industry Collaboration", attended by JICA, UN, JST etc.

Editor-in-Chief — "MEMOIR" TFI EXCHANGE MAGAZINE, OGEM, NTU SINGAPORE [2018]
Led a diverse team from 12 nations to publish annual magazine covering events, experiences & stories of exchange students.

Scholar Elect — 9ᵀᴴ GLOBAL YOUNG SCIENTISTS SUMMIT, NATIONAL RESEARCH FOUNDATION, SINGAPORE [2021]

Delegate — YENCHING GLOBAL SYMPOSIUM, PEKING UNIVERSITY, CHINA *G20 role: President Xi Jinping* [2021]
In my simulated role, published a joint statement to collaborate on multifold challenges of climate, economic and health crisis

INTERNATIONAL FELLOWSHIPS & GRANTS

Fellowships

2017 — HONDA YOUNG ENGINEER & SCIENTIST(YES) AWARD │ HONDA FOUNDATION, JAPAN
· *Cohort of 32 awardees across 6 nations recognised for **leadership roles** in eco-technology. Endowed with US$10,000.*

2018 — TFI-LEADERSHIP & REGIONAL NETWORKING SCHOLARSHIP │ TEMASEK INTERNATIONAL, SINGAPORE
· *Cohort of 38 scholars from 12 SEA nations recognised for academics, leadership & social impact. Endowed with SG$6,500.*

2019 — SHASTRI SRSF FELLOWSHIP │ SHASTRI INDO-CANADIAN INSTITUTE, CANADA
· *Among 50 MS-PhDs awarded for excellence in AI research & support to pursue further in Canada (value CA$9,000).*

Grants · 2018 · ANALOG DEVICES ANVESHAN TECH DEVELOPMENT GRANT, *to develop low-cost diagnostic devices.* (₹100k)
2019 · L&T CREATECH INNOVATION AWARD, *for developing active water monitoring tech solutions in rural India.* (₹25k)
2020 · MICROSOFT AI FOR EARTH GRANT, *to develop AI solutions for burn scar identification in Amazon rainforest.*(US$10k)

ACADEMIC SCHOLARSHIPS & AWARDS [*AIR: ALL INDIA RANK]

Thesis Awards · NATIONAL BUDDING INNOVATOR AWARD NRDC, MINISTRY OF SCIENCE & TECHNOLOGY (MST), INDIA
Among 10 awardees in India for developing low cost medtech of huge social impact; Mention in MST's report to parliament.
· GRADUATE RESEARCH AWARD(URA03) *IIT Bombay for exceptional published AI research in Masters thesis.*
· UNDERGRAD RESEARCH AWARD(URA01) *IIT Bombay for exceptional published medtech research in Bachelors project.*

Research Fellowships · SUMMER RESEARCH FELLOWSHIP *by Indian Academy of Sciences, Bangalore.* [2016]
· NIUS FELLOWSHIP *by HBCSE, Tata Institute of Fundamental Research, India.* [2015]
· KVPY NATIONAL FELLOWSHIP IN SCIENCES *by Deptt.Science & Technology, Govt of India* │ AIR 14 [2014]

Olympiads · TOP 20 *in* INDIA EARTH SCIENCE OLYMPIAD. *Competed for Team India OCSC selections for IESO XII Argentina.*
· AIR 15 *in* REGIONAL MATHS OLYMPIAD'12. AIR 26 & STATE 3 *in* JUNIOR MATHS OLYMPIAD'12.
· *Numerous awards for securing ranks like* AIR 3 *in* NISO'07, AIR 10 *in* NBTO'08, & AIR 38 *in* NISO'09.

EXTRA CURRICULARS

Arts · Dramatics etc. · BLACKSTONE IITB BUSINESS CHALLENGE'19 : 3ᴿᴰ PRIZE, *selected from 250+ participants over a 6-month program.*
· *Represented Hostel-6 in* INTER-HOSTEL CRICKET & DRAMATICS *General Championships at IIT Bombay.*
· PHOTOS *selected by Ambassador of Japan for Click! Japan Photo Exhibition at The Gallery, New Delhi, 1ˢᵗ-17ᵗʰAug'19*
· LANGUAGES *English, Hindi, Learnt German for 5 years in school (CEFR B1 eq.), Japanese for 1+ yr (JLPT N5+ eq.)*
· INTERESTS *include Dramatics, Cricket, Photography, Philately, Art.*

Community & Voluntary Work — CORPORATE AFFAIRS │ EXECUTIVE COMMITTEE , IIT ALUMNI CHAPTER JAPAN [07/21-now]
MEMBER │ GENDER CELL, IIT BOMBAY [06/19-05/20]
· *Trained & certified to identify sexual harassment & support aggrieved students; Conducted gender sensitization workshops.*
COMMUNITY VOLUNTEER │ INSTITUTE OF MENTAL HEALTH, SINGAPORE [08/18-12/18]
· *Visited IMH every week to conduct social & recreational activities for therapeutic engagement & rehabilitation of patients.*
EVENT VOLUNTEER │ SINGAPORE NATIONAL PARA GAMES │ 250+sportsperson, 19000+footfall. [11/18]
INDO-PAK PEACE PROJECT │ *Awareness events & Policy campaign, advocating for cultural diplomacy measures.* ['10]
UNEP BILLION TREE CAMPAIGN │ *Coordinated with local efforts & organised events, awareness & plantation drives.*[08'-'11]