

# Meem Arafat Manab

*Marie Skłodowska-Curie Doctoral Fellow,  
Law, Ethics, and Computer Science*

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 Meem-Arafat-Manab



## Research Overview

I am a Marie Skłodowska-Curie doctoral fellow and researcher based at Universidad Politécnica de Madrid in Spain. My research dwells in the intersection of law, artificial intelligence, and cybersecurity. I can bring multiple perspectives and research methods, both data-driven and empirical, to a research project.

## Research Career

- 2025– **Marie Skłodowska-Curie Doctoral Fellow**, *Harness Doctoral Network, focusing on law, artificial intelligence, ethics, and European Data Spaces*, Spain, Ireland, Coordinator: Dr. Victor Rodríguez-Doncel, Supervisor: Dr. Elena Montiel-Ponsoda, Universidad Politécnica de Madrid
- 2024–2025 **Research Fellow**, *Panacea Cooperative Research* and Universidad de León, Spain, Supervisors: Dr. Laura Robles, Dr. Victor Gonzalez Castro, Dr. Oscar Ibañez (Universidad da Coruña), and Dr. Guillermo Gomez Trenado (Universidad de Granada)
- 2024–2025 **Editor**, *EMILDAI Blog*, Supervisor: Dr. Edoardo Celeste, Co-Editor: Nauani Schades Benevides
- 2024 – **Research Associate**, *School of Religion, Theology, and Peace Studies*, Trinity College Dublin, Ireland, Supervisor: Dr. Maja Halilovic-Pastuovic
- 2024 – **Contributor**, *AIAAIC Repository*, UK, Supervisor: Charlie Pownall
- Summer 2024 **Research Intern**, *ADAPT Center*, Trinity College Dublin, Ireland, Supervisors: Dr. David Lewis and Delaram Golpayegani
- Summer 2024 **Visiting Researcher**, *Insight SFI Research Centre*, Dublin City University, Ireland, Supervisor: Dr. Alessandra Mileo
- 2020–2023 **Lecturer**, *Department of Computer Science and Engineering*, BRAC University, Bangladesh
- 2022–2023 **Programme Manager**, *OSUN Science Shop*, BRAC University, Bangladesh, Supervisors: Dr. Samia Huq, Andras Martoni  
Joint project with Central European University in Austria, European Humanities University in Lithuania, and American University of Central Asia in Kyrgyzstan
- SP 2023 **Affiliated Faculty**, *Bard College*, New York, USA, Host: Dr. Jordan Ayala and the Levy Economics Institute of Bard College
- 2021–2022 **Workshop Facilitator**, *Oboyob Diversity Circle*, Bangladesh, Co-facilitator: Nazia Zebin
- 2020–2021 **Short Term Consultant**, *The World Bank Group*, Disaster Management Unit, South Asia Region, Supervisor: Partha Pratim Nath
- Fall 2020 **Research Assistant**, *Oboyob Diversity Circle*, Bangladesh, Supervisor: Nazia Zebin  
In cooperation with ILGA Asia
- Fall 2019 **Graduate Trainee**, *Fujitsu Research Institute*, Tokyo, Japan
- 2013–2018 **Academic Team Member**, *Bangladesh Mathematics Olympiad Committee*, Bangladesh, Supervisor: Dr. Mahbubul Alam Majumdar
- SP 2017 **Teaching Assistant**, *Department of Computer Science and Engineering*, University of Dhaka, Bangladesh  
Course: CSE3205: Mathematics for Computer Science, Supervisor: Dr. Amin Ahsan Ali

## Education

- 2025– **Ph.D. in Artificial Intelligence, Universidad Politécnica de Madrid, Spain**
- Topic: Risks and Opportunities of European Data Spaces
  - Supervisors: Dr. Elena Montiel-Ponsoda and Dr. Harshavardhan Pandit (Trinity College Dublin)
  - Professional development: Venice International University Winter School on Digital Rights, Theory and Practice (2026)
- 2023–2025 **European Master in Law, Data and AI, Dublin City University and University of León, Ireland, Spain**
- Grade: 1H1 (Irish Standard), 8.72/10 (Spanish Standard)
  - Master thesis: Age detection from images and video streams applied to forensic analysis.
  - Key Modules: European Data Protection Law, AI and Information Seeking, Comparative Privacy Law, Data Governance, Data Management and Visualization, Cybercrime and Cyberdefense, Secure Design and Programming, Trustworthy Systems, Forensic Analysis.
  - Supervisors: Dr. Edoardo Celeste and Dr. Victor González Castro.
  - Erasmus Mundus Masters with Full Scholarship.
  - Expected graduation: July 2025 with First Class Honours (1H1).
  - Internship: ADAPT Center, Trinity College Dublin (8 weeks) – Converted parts of the EU AI Act to industry standards.
  - Internship: Insight SFI Research Center, Dublin City University (12 weeks) – Extracted classification taxonomy from graph-like structure derived from SOTA neural network models.
- 2014–2018 **Bachelor of Science in Computer Science and Engineering, University of Dhaka, Bangladesh**
- Grade: 3.60/4.00.
  - Key Modules: Data Mining and Machine Learning, Data Structures, Algorithms, Object-Oriented Programming, Human-Computer Interaction.
  - Supervisors: Dr. Muhammad Asif Hossain Khan.

## Awards and Honors

- 2024 FGULEM Scholarship, Institute of Business Competitiveness in Castille and Leon, Spain
- 2023 Erasmus Mundus Scholarship, European Commission
- 2023 Economy of Tomorrow Fellowship, Friedrich-Ebert-Stiftung, Bangladesh
- 2022 OSUN Experiential Learning Institute Fellow, Bard College, New York, USA
- 2021 CLASP Fellow, Institute of Writing and Thinking, New York, USA

## Publications, Editorials and Conferences

### Book Chapters

M.I. Rakib, S. Rahman, J.J. Mondal, X. Xiao, D. Lewis, A. Mileo and M.A. Manab. TWIG: Two-Step Image Generation Using Segmentation Masks as an Intermediary in Diffusion Models to Prevent Copyright Infringement. In *Privacy and Identity Management. Generating Futures. Privacy and Identity 2024. IFIP Advances in Information and Communication Technology*, vol 705 (Ed. F. Bieker, S. De Conca, J.M. Del Alamo, Y.S. Martín). Springer, Cham, Switzerland, 2025. ISBN: 978-3-031-91053-1.

M.A. Manab and N.S. Benevides. Barriers to geographic data in having a data cooperative: Satellites, privacy, and the dual monopoly of states and big techs. In *EU Data Cooperatives: L'ingresso delle cooperative di dati nell'ordinamento europeo* (Ed. F. Bravo), G. Giappichelli Editore, Torino, Italy, 2025. ISBN/EAN: 979-12-211-1146-0.

M.A. Manab. Mourning for my women. In *Himal Southasian*, vol. 29, no. 3. 2016.

### Journals

M.F. Islam, M.T. Reza, M.A. Manab, S. Zabeen, M.F.U. Islam, M.F. Shahriar, M. Kaykobad, M.G.Z.A. Husna, and J. Noor. Involution-based efficient autoencoder for denoising histopathological images with enhanced hybrid feature extraction *Computers in Biology and Medicine*, 192:110174, 2025.

M.F. Islam, M.A. Manab, J.J. Mondal, S. Zabeen, F.B. Rahman, M.Z. Hasan, F. Sadeque, and J. Noor. Involution fused convolution for classifying eye-tracking patterns of children with autism spectrum disorder. *Engineering Applications of Artificial Intelligence*, 139:109475, 2025.

S. Labib, J.J. Mondal, M.A. Manab, X. Xiao, and S. Newaz. Tailoring adversarial attacks on deep neural networks for targeted class manipulation using deepfool algorithm. *Scientific Reports*, 15:10790, 2025.

J.J. Mondal, M.F. Islam, R. Islam, N.K. Rhidi, S. Newaz, M.A. Manab, A.A.A. Islam, and J. Noor. Uncovering local aggregated air quality index with smartphone captured images leveraging efficient deep convolutional neural network. *Scientific Reports*, 14(1):1627, 2024.

## Conference Proceedings

- M.A. Manab and A. Nowshin. Return of the headless king: Panopticon, surveillance, and machine intelligence. In *Building Trust in CUIs: A Hybrid Workshop at the ACM CHI 2024 Conference*, 2024.
- M.F. Islam, S. Zabeen, F.B. Rahman, M.A. Islam, F.B. Kibria, M.A. Manab, D.Z. Karim, and A.A. Rasel. Unic-net: Uncertainty aware involution-convolution hybrid network for two-level disease identification. In *Proceedings of IEEE Region 3 Technical, Professional, and Student Conference SoutheastCon 2023*, pages 305–312. IEEE, 2023.
- M.F. Islam, S. Zabeen, F.B. Rahman, M.A. Islam, F.B. Kibria, M.A. Manab, D.Z. Karim, and A.A. Rasel. Exploring node classification uncertainty in graph neural networks. In *Proceedings of the 2023 ACM Southeast Conference*, pages 186–190, 2023.
- M.F. Islam, S. Zabeen, M.A. Islam, F.B. Rahman, A. Ahmed, D.Z. Karim, A.A. Rasel, and M.A. Manab. How certain are transformers in image classification: Uncertainty analysis with Monte Carlo dropout. In *Fifteenth International Conference on Machine Vision (ICMV 2022)*, volume 12701, pages 158–165. SPIE, 2022.
- J.J. Mondal, A. Zahin, M.A. Manab, and M.Z. Hasan. Does a support role player really create difference towards triumph? Analyzing individual performances of specific role players to predict victory in League of Legends. In *2022 25th International Conference on Computer and Information Technology (ICCIT)*, pages 768–773. IEEE, 2022.
- J.J. Mondal, M.F. Islam, S. Zabeen, and M.A. Manab. Invoponet: Detecting pothole from images through leveraging lightweight involitional neural network. In *2022 25th International Conference on Computer and Information Technology (ICCIT)*, pages 599–604. IEEE, 2022.
- M.F. Islam, F.B. Rahman, S. Zabeen, M.A. Islam, M.S. Hossain, M.H.K. Mehedi, M.A. Manab, and A.A. Rasel. RNN variants vs transformer variants: Uncertainty in text classification with Monte Carlo dropout. In *2022 25th International Conference on Computer and Information Technology (ICCIT)*, pages 7–12. IEEE, 2022.

## Preprints

- M.A. Manab. Eternal sunshine of the mechanical mind: The irreconcilability of machine learning and the right to be forgotten. *arXiv preprint arXiv:2403.05592*, 2024.
- M.F. Islam, S. Zabeen, M.A. Manab, M.R. H. Mahin, J.J. Mondal, M.T. Reza, M.Z. Hasan, M. Haque, F. Sadeque, and J. Noor. Med-ic: Fusing a single layer involution with convolutions for enhanced medical image classification and segmentation. *arXiv preprint arXiv:2409.18506*, 2024.
- M.F. Islam, M.T. Reza, M.A. Manab, M.R.H. Mahin, S. Zabeen, and J. Noor. Spatially optimized compact deep metric learning model for similarity search. *arXiv preprint arXiv:2404.06593*, 2024.
- I. Hassan, A. Mujahid, A.A. Hasib, A.R. Shagoto, J.J. Mondal, M.A. Manab, and J. Noor. Aerial flood scene classification using fine-tuned attention-based architecture for flood-prone countries in South Asia. *arXiv preprint arXiv:2411.00169*, 2024.
- M.F. Islam, M.A. Manab, J.J. Mondal, S. Zabeen, F.B. Rahman, M.Z. Hasan, F. Sadeque, and J. Noor. Involution fused ConvNet for classifying eye-tracking patterns of children with autism spectrum disorder. *arXiv preprint arXiv:2401.03575*, 2024.
- J.J. Mondal, M. F. Islam, R. Islam, N. K. Rhidi, A. Islam, M.A. Manab, and J. Noor. Unmasking the invisible: Finding location-specific aggregated air quality index with smartphone-captured images. *arXiv preprint arXiv:2308.03200*, 2023.
- F. Islam and M.A. Manab. Investigating global venture capital investment: Literature review, cross-country insights, and a Bangladesh case study. *Social Science Research Network*, 2023.

## Symposiums, Talks, and Conference Presentations

- M.A. Manab. Formalizing Institutional Data Custody: A Legal-Informatics Approach to Multi-Tier Data Governance in European Data Spaces. 38th International Conference on Legal Knowledge and Information Systems (JURIX) Doctoral Consortium, Università degli Studi di Torino, Turin, Italy, December 2025.
- M.A. Manab, E. Montiel-Ponsoda, and V.Rodríguez-Doncel. Free Flow of Data and the Geography of Policies: Detecting Data Localisation Restrictions with Forward-Compatible Ontologies. *Fifth Workshop of AI4Legs-V: AI for Legislation*, Collocated with the 38th International Conference on Legal Knowledge and Information Systems (JURIX 2025), Università degli Studi di Torino, Turin, Italy, December 2025.

S. Leyva-Sánchez, F. Linde, M.A. Manab, M. Poveda-Villalón, and V. Rodríguez-Doncel. DAOnt: A Formal Ontology for EU Data Act Compliance. *CLAIRvoyants 3º ConventicLE on Artificial Intelligence Regulation and Safety*, Collocated with the 38th International Conference on Legal Knowledge and Information Systems (JURIX 2025), Università degli Studi di Torino, Turin, Italy, December 2025.

M.A. Manab. Siliconwashing: How Tech Ethics Discourse undermines Human Rights for the Marginalized. *Congreso Internacional de Direitos Humanos de Coimbra*, Universidade de Coimbra, Portugal, October 2025.

M.A. Manab and V.G. Castro. Private Information is Language Knowledge: GDPR Compliance, Privacy Rights, and the Catastrophe of Systematic Linguistic Degradation. *20th IFIP Summer School on Privacy and Identity Management*, Technical University of Denmark, Copenhagen, Denmark, August 2025.

M.A. Manab. Eternal sunshine of the mechanical mind: How the right to privacy and the right to be forgotten is subsumed by generative AI. *DPSN International Data Protection Day work-in-progress event*, Online. January 2025.

M. Mahmud and M. A. Manab. Analyzing University Reactions to Student Movements in the Palestinian Conflict: The Response-Counter-Response of Higher Education Institutions. *Annual Postgraduate Research Conference, Senator George Mitchell Institute*, Queen's University Belfast, June 2024

M.A. Manab and M.F. Islam. Adversarial Attack against A.I. for Pedagogical Purposes: Designing Prompts for Students and not ChatGPT. *First Elkana Symposium on Reimagining Teaching and Learning*, Central European University, Austria, June 2023

A.A. Chowdhury and M.A. Manab. The New Path to – or the New Face of – Domination? Some Emerging Technologies that Show Signs of a Growing Cold/Closed Society. *Workshop on "The Road to Domination? The Open Society and New Technologies"*, Open Society Research Platform, Central European University, Austria, April 2022

## Editorials

M.A. Manab and N. Benevides. EDITORIAL: Two Years of ChatGPT Chaos: How AI Detection Keeps Gaslighting the Bible. In *EMILDAI Blog*, 2 December 2024

M.A. Manab and M. Mahmud. Gonodholai theke Gonopituni: Mob-tantrik Bangladesh (in Bengali, *From Mass Cleansing to Mass Lynching: Mob-ocratic Bangladesh*). In *Netra News*, 13 October 2024.

## Community Services

**External reviewer** IEEE TNNLS (Transactions on Neural Networks and Learning Systems, 2025), IJCCE (International Journal of Cognitive Computing in Engineering, 2025), CSCW (ACM SIGCHI Conference on Computer-Supported Cooperative Work and Social Computing, 2025), WACV Workshop on Vision-Based Understanding for Low-Resource Languages (2024), ACM Journal on Computing and Sustainable Societies (2024, 2023), NeurIPS (ethics review, 2025, 2023)

**Volunteer** Democratic Odyssey at the European University Institute, Florence, Italy (2025), British and Irish Law, Education and Technology Association (BILETA) Annual Conference, Dublin, Ireland (2024)

**Member** International Federation for Information Processing (IFIP) Working Group 9.6/11.7 on Information Technology: Misuse & the Law (2024–)

## Teaching

### Undergraduate Courses: Theory

SU 2022–SU 2023 **CSE422: Artificial Intelligence**, BRAC University, Bangladesh, Topics: Search algorithms, optimization problems, heuristic algorithms

SP 2023 **GIS for Environmental Justice**, Bard College, NY, USA, Topics: Spatial data analysis to explore economic inequalities, co-taught with Dr. Jordan Ayala

SU 2021–SP 2023 **CSE474: Simulation and Modeling**, BRAC University, Bangladesh, Topics: Agent-based simulation, probabilistic graphical models, compartmental models, dynamic network analysis

F 2022–SP 2023 **CSE490.18: Geospatial Data Analysis**, BRAC University, Bangladesh, Topics: Geospatial data manipulation using ArcGIS, QGIS, Geopandas

F 2021–SU 2022 **MAT 216: Linear Algebra and Fourier Analysis**, BRAC University, Bangladesh, Topics: Vector spaces, Fourier analysis, Fourier transform

SP 2022 **MAT 215: Complex Variables and Laplace Transforms**, BRAC University, Bangladesh, Topics: Complex analysis, line integrals, Laplace transformations

SU 2021–SP **CSE 423: Computer Graphics**, BRAC University, Bangladesh, Topics: Clipping and transformations, raster graphics concepts

SU 2021 **CSE 331: Automata and Computability**, BRAC University, Bangladesh, Topics: Mathematical models of computation, Turing machines, NP-completeness, time complexity

SP 2021 **CSE 230: Discrete Mathematics**, BRAC University, Bangladesh, Topics: Discrete probability, mathematical logic, graph theory, algebraic groups

F 2020 **CSE 260: Digital Logic Design**, BRAC University, Bangladesh, Topics: Boolean algebra, combinational and sequential circuit analysis

#### [Undergraduate Courses: Lab](#)

SU 2023 **CSE472L: Human Computer Interface Lab**, BRAC University, Bangladesh, Topics: User-centered design, human-computer interaction

SU 2023 **CSE421L: Computer Networks Lab**, BRAC University, Bangladesh, Topics: Wireless networks, fault tolerance, network security

SU 2023 **CSE370L: Database Systems Lab**, BRAC University, Bangladesh, Topics: Database design, SQL and its variants

SU 2023 **CSE427L: Machine Learning Lab**, BRAC University, Bangladesh, Topics: Neural networks, semi-supervised learning, reinforcement learning

SU 2023 **CSE427L: Cloud Computing Lab**, BRAC University, Bangladesh, Topics: Containerization and parallelization, secure networking, synchronization control in distributed systems

SU 2021–SP **CSE474L: Simulation and Modeling Lab**, BRAC University, Bangladesh, Topics: Epidemic modeling, scientific computing, synthetic data generation

#### [Undergraduate Courses: Teaching Assistant](#)

SP 2017 **CSE3205: Mathematics for Computer Science**, University of Dhaka, Bangladesh, Topics: Scientific computing, classification and regression, interpolation

## [Languages](#)

Bengali Mother tongue

English Bilingual proficiency,

IELTS Score: 8.5 (2020); lived in Ireland 2023 – 2024

Spanish Professional proficiency,

B2 Certificate (2021); lives in Spain 2024 onwards

German Limited proficiency,

A2 (2023)

## [Additional Skills](#)

Programming Python, R, Bash Scripting, Java, C, C++, MATLAB

Data Science TensorFlow, Pytorch, Keras, OpenCV, PCL, Geopandas, QGIS, Langchain

Development Git, Docker, Kubernetes, AWS, Flask

Blockchain Smart Contracts (Solidity)