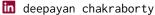
## Deepayan Chakraborty

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#### **Education**

Ph.D., Department of AI, Indian Institute of Technology, Kharagpur.

Thesis title: Generative, Explainable, and Causal AI for Climate Prediction and Simulation.

2016 – 2018 M.Tech. Computer Science and Engg.(Spl. in Information Security), Indian Institute of Technology (Indian School of Mines), Dhanbad.

Thesis title: Segmentation of Connected Handwritten English Words.

B.Tech. Computer Science and Engg., Techno India College of Technology (currently, Techno International).

### **Employment History**

Dec, 2018 – June, 2019 Project Linked Person in ECSU, Indian Statistical Institute, Kolkata for the project "Information Access from the Document Images of Indian Languages" under Prof. Bhabatosh Chanda.

Jul, 2018 – Sep, 2018 Assistant Professor. CSE Department, Institute of Engineering and Management, Kolkata.

2014 – 2016 Software Engineer Anti Money Laundering Project, L&T Infotech, Chennai.

#### **Research Publications**

- D. Chakraborty, R. Kishore, R. Naskar, S. Jaiswal, and A. Mitra, "A comparative study of generative models as surrogates of earth system models to simulate global sea surface temperature," Jul. 2025. 
  PDOI: 10.22541/essoar.175396162.29110800/v1.
- D. Chakraborty and A. Mitra, "Simulation of global sea surface temperature maps using pix2pix gan," *Environmental Data Science*, vol. 4, 2025, ISSN: 2634-4602. ODI: 10.1017/eds.2024.38.
- D. Chakraborty, D. Sharma, A. Mitra, and B. N. Goswami, "Cv-gan a generative model to simulate global climate variability," May 2025. ODI: 10.22541/essoar.174671893.31045476/v1.
- D. Sharma, S. Das, D. Chakraborty, A. Mitra, and B. N. Goswami, "Improving indian summer monsoon rainfall prediction using deep learning up to two years in advance," 2025. ODOI: https://doi.org/10.1002/qj.70023.
- B. N. Goswami, D. Chakraborty, P. V. Rajesh, and A. Mitra, "Predictability of south-asian monsoon rainfall beyond the legacy of tropical ocean global atmosphere program (toga)," *npj Climate and Atmospheric Science*, vol. 5, no. 1, Jul. 2022, ISSN: 2397-3722. ODI: 10.1038/s41612-022-00281-3.
- M. Wadhwani, D. Kundu, D. Chakraborty, and B. Chanda, "Text extraction and restoration of old handwritten documents," in *Digital Techniques for Heritage Presentation and Preservation*. Springer International Publishing, 2021, pp. 109–132, ISBN: 9783030579074. ODI: 10.1007/978-3-030-57907-4\_6.

- R. Mondal, D. Chakraborty, and B. Chanda, "Learning 2d morphological network for old document image binarization," in 2019 International Conference on Document Analysis and Recognition (ICDAR), IEEE, Sep. 2019, pp. 65–70. ODI: 10.1109/icdar.2019.00020.
- D. Chakraborty, R. Pramanik, and S. Bag, "A novel approach towards segmentation of connected handwritten numerals," in 2017 Fourth International Conference on Image Information Processing (ICIIP), IEEE, Dec. 2017, pp. 1–5. ODI: 10.1109/iciip.2017.8313737.

#### **Skills**

Interests

- Understanding the recent climate scenario (mainly the recent catastrophic events)
- Apply the knowledge of AI to understand Natural Sciences
- · Philosophy
- Politics
- · Global Culture
- Mythology

Research Interests

- · Application of AI and Statistics in
  - Climate Science
  - Other field of Science (Psychology, Physics, Chemistry)
  - Policy Making
- · AI based Foundation Models
- Preparing light-weight surrogates for the AI-based Earth System Models.
- Working with a team of diverse expertise.
- Learning about the application for research projects.

Coding Languages

- Python (PyTorch for Deep Learning), Matlab, JAVA, C.
- Hobbies
- Trekking, Swimming, Reading Novels, Playing Guitar, and Squash.

## Miscellaneous Experience

Visit

Sustainability and Data Sciences Lab, North Eastern University, Boston, as part of the SPARC program by MHRD, Govt. of India.

# Miscellaneous Experience (continued)

Annual Meet

- Chakraborty, Deepayan, and Adway Mitra. "Analyzing the Contribution and Interactions Between Global Drivers of Indian Summer Monsoon using Interpretable AI." AGU Fall Meeting Abstracts. Vol. 2024. 2024.
- Chakraborty, Deepayan, and Adway Mitra. "Analyzing the Contribution and Interactions Between Global Drivers of Indian Summer Monsoon using Interpretable AI." AGU Fall Meeting Abstracts. Vol. 2024. 2024.
- Chakraborty, Deepayan, et al. "Simulation of Monthly Global Sea Surface Temperature Data using Ensemble Pix2Pix Conditional GAN." AGU Fall Meeting Abstracts. Vol. 2024.
- Chakraborty, Deepayan, et al. "Identification of Global Drivers of Indian Summer Monsoon using Causal Inference and Interpretable AI." EGU General Assembly Conference Abstracts. 2022.

Workshops Attended



- ML for Earth System Science in ICTS, Bangalore, 2025.
- SPARC workshop by Prof. Auroop R. Ganguly in IIT Kharagpur, 2025.