

# Prof. Sudeshna Sarkar

## Distinguished Fellow of the IIT Alumni Council's AI Forum — Profile and Success Details

Prof. Sudeshna Sarkar stands as an eminent voice in Indian artificial intelligence, machine learning, and especially natural language processing (NLP). As **Professor** and Head of the Centre of Excellence in **AI** at IIT Kharagpur, she has built an outstanding legacy in *research*, institution-building, and talent development.

### Academic Journey and Leadership

Prof. Sarkar earned her higher degrees from premier Indian institutions and rapidly established herself within IIT Kharagpur's Department of Computer Science and Engineering. Her *research* interests span core **AI**, NLP, information retrieval, machine learning, and speech processing. As department head and CoE-**AI** leader, she has overseen major interdisciplinary initiatives and guided the emergence of IIT Kharagpur as a national powerhouse for **AI research** and *innovation*.

### Key Research Successes and Innovations

**Natural Language Processing and Multilingual AI:** Prof. Sarkar is widely recognized for pioneering multilingual event extraction, cross-lingual dependency parsing, and sentiment analysis for Indian languages. Her work underpins applications in computational journalism, including automated content analysis to detect bias and perspectives in news reporting using machine learning and large language models. She has developed joint event extraction models, stakeholder identification algorithms, and bias mitigation techniques that push the boundaries of modern NLP.

**Biomedical, Legal, and Social Applications:** Through her supervision of multiple doctoral theses, she has enabled advances in **AI**-powered biomedical knowledge extraction, legal document understanding, and climate data mining. Her projects range from legal summarization and direct marketing optimization to weather prediction via deep learning.

**Highly Cited Research and Scholarly Impact:** Prof. Sarkar is among the top 3% of world computer scientists in citation rankings, with an H-index over 34 and more than 3,700 citations. She has published influential papers on stylometric analysis, opinion mining, cross-lingual event detection, named entity recognition, and more. Her co-authored publications are standard references for Indian language NLP and machine learning communities.

**Innovation for Societal Good:** She has guided *research* in resource-scarce **AI**, enabling Indian languages and social sectors to benefit from technological advances. Notable examples include event extraction in disaster news and technology for downscaling precipitation to support climate change efforts.

### Achievements, Recognition, and Influence

**Distinguished Fellow**, IIT Alumni Council's **AI** Forum: As a recognized Fellow, Prof. Sarkar bridges alumni, academia, and industry, advancing the council's *vision* to foster world-class **AI research** and engineering *leadership*. Her role amplifies the council's outreach in policy, applied *research*, and technology-driven education.

**Leadership in Education and Talent Development:** Numerous PhD and master's graduates mentored by Prof. Sarkar now occupy *leadership* roles in academia and cutting-edge industries worldwide. She has

helped launch national certification programs in **AI**, designed interdisciplinary curricula, and co-organized India's major **AI** outreach initiatives.

National and Global Engagements: Prof. Sarkar has delivered distinguished lectures, presided over major *research* workshops, and contributed to policy dialogues on **AI** for social good in India's emerging economy. Her impact extends to advising on policy, building new academic alliances, and shaping the **AI** conversation at both grassroots and global enterprise levels.

## **Reputation and Legacy**

Known for her analytical rigor, empathetic mentorship, and pioneering *vision*, Prof. Sudeshna Sarkar continues to inspire the Indian **AI** community. As a **Distinguished Fellow** of the IIT Alumni Council's **AI** Forum, she is a linchpin in elevating India's capacity and reputation as a center for **AI innovation** and ethical technological advancement. Her career is a testament to the transformative potential of data-driven, contextually-aware, and socially impactful **AI** for India and the world.

This profile is a synthesis based on available academic, professional, and *research* output data as of August 2025, highlighting Prof. Sudeshna Sarkar's impact as a **Distinguished Fellow** and **AI** leader.