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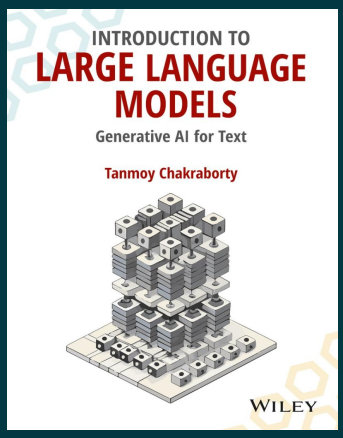

Introduction to Large Language Models

By Tanmoy Chakraborty

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Description

Introduction to Large Language Models (LLMs) is a comprehensive guide for understanding the foundations and advancements of Generative AI for Text. Designed for educators and enthusiasts, the book starts with key linguistic concepts and progresses through NLP fundamentals—from word embeddings to pretrained foundational models.

Readers will learn how LLMs process and generate language, overcome limitations, and enhance performance using techniques like prompt engineering, retrieval-augmented generation, and human alignment. The book uniquely presents cutting-edge research in a concise format, enriched with visual aids, exercises, and practical resources.

Ideal for computer science faculty, this resource offers both theoretical insights and real-world applications, showcasing how LLMs like ChatGPT are transforming technology and advancing AI innovation.

About the Author

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Dr. Tanmoy Chakraborty is an Associate Professor in the Department of Electrical Engineering at IIT Delhi and an Associate Faculty Member at the Yardi School of Artificial Intelligence. An ACM Distinguished Speaker (2023–2025) and former Ramanujan Fellow (2018–2023), he has held key academic roles, including heading the Infosys Centre for Artificial Intelligence at IIIT Delhi.

Dr. Chakraborty earned his Ph.D. as a Google India scholar at IIT Kharagpur and completed a postdoctoral fellowship at the University of Maryland, College Park. His research spans Natural Language Processing (NLP), Graph Neural Networks, and Social Computing, with a focus on creating frugal, explainable LLMs for applications in mental health and cyber-informatics.

He leads the Laboratory for Computational Social Systems (LCS2) and also recipient of multiple faculty awards from Google, Adobe, and Accenture,

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