ENGINEERING SOUTH 237 | FRIDAY, AUGUST 29 | 3:30-4:30PM
REFRESHMENTS WILL BE SERVED

SCHOOL OF
ELECTRICAL AND COMPUTER ENGINEERING
College of Engineering, Architecture and Technology

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DR. SABIT EKIN

Dr. Sabit Ekin is an Associate Professor in Engineering Technology and Electrical & Computer Engineering at Texas A&M University, where he earned his Ph.D. in 2012. He has over a decade of experience, including four years as a Senior Modem Systems Engineer at Qualcomm Inc., where he received multiple Qualstar awards for contributions to cellular modem receiver designs for companies like Apple, Samsung, Google, and Nokia. Prior to joining Texas A&M, Dr. Ekin was a faculty member of the Electrical and Computer Engineering department at Oklahoma State University between 2016 and 2022.

His dedication to education and research excellence has been recognized with several honors, including being named the PSO/Albrecht Naeter Endowed Professor of ECE at OSU in 2022, a Jack H. Graham Endowed Fellow of Engineering at OSU in 2021, and receiving the prestigious 2022 Department of Energy Early CAREER Award. Dr. Ekin is also the founder and Director of the Generative AI Literacy Initiative at Texas A&M, a collaboration with OpenAI's NextGenAI Consortium—a $50M partnership among 15 leading institutions, including MIT, Harvard, Duke, Caltech, and Oxford.

ABSTRACT

Brains Behind the Chatbots: How Transformers Power Large Language Models

Chatbots like ChatGPT may seem magical, but what's really going on inside their "brains"? The answer is Transformers—a breakthrough in artificial intelligence. Unlike older models that read words one at a time, transformers look at an entire sentence (or even a whole paragraph) at once, figuring out how each word relates to the others. This "attention" trick allows large language models (LLMs) to generate smooth, meaningful text, translate languages, and even hold conversations that feel natural. In this talk, we'll break down the magic behind transformers using simple examples, explore how models learn from huge amounts of data, and play with the "settings" that shape their personality—like temperature (how creative the AI sounds) and top-k (how many word options it considers). By the end, you'll understand not only how these models work, but also why they're changing the way we study, work, and create.