

IEEE IEVC 2024 Keynote 3 by TY Lin, Deputy General Manager of MediaTek
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TY Lin (林宗瑤)

Deputy General Manager
Computing and Artificial Intelligence Technology Group
MediaTek Inc.

TY received both his Bachelor's and Master's degrees from National Taiwan University. After completing his military service in the Navy, he joined MediaTek in 1999 as a digital signal processing (DSP) engineer. He was a founding member of the DVD Player SOC team, which achieved a worldwide #1 share in 2002 with the most design awards of all global tier-one brands such as SONY, Panasonic, LG, etc. Since 2004, TY has been rotated to the management positions of different teams such as DTV SoC, Android TV, PQ engine, and computing platform architecture engineering. He currently leads MediaTek's central AI teams to design AI processors, AI softwares, and AI algorithms for smartphone, smart TV, smart cameras, automotive, and AIoT product lines. The latest MediaTek SOC just won the WW 1st position of ETHZ AI benchmark.

Title: Bringing Generative AI to Your Fingertips

Summary:

Edge AI has evolved dramatically, advancing from basic image recognition to enhancing the quality of videos and games and then to content generation with the advent of Generative AI. Diffusion models, are now capable of generating not just images but also videos and intricate 3D scenes from simple text prompts. Traditionally models require substantial computing resources and are predominantly cloud-based.

In this presentation, we will explore the transition of Generative AI to edge devices. Our goal is to enable a new suite of applications that harness the power of Generative AI directly on your devices, allowing for the instant creation of stunning images, videos, and 3D content on-demand. We will discuss emerging applications of text to image and video models, like OpenAI's Sora, that can produce minute-long videos with high visual fidelity, or Stable Video Diffusion for dynamic content generation. Additionally, we will touch on Neural Radiance Fields (NeRF) and its alternatives for 3D content and scene creation, and the multimodality capabilities of these models. The challenges are significant, necessitating innovative IC design and optimization of AI algorithms to run efficiently with minimal energy consumption.

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