

Hon Hai Research Institute unveils AI-enabled ModeSeQ for autonomous driving trajectory prediction

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ModeSeq by HHRI excels in CVPR 2025, enhancing vehicle decision-making with improved motion prediction techniques

Hon Hai Research Institute (HHRI), a division of Hon Hai Technology Group (Foxconn), has announced that AI-enabled ModeSeq has secured the top position in the Waymo Open Dataset Challenge and was presented at the CVPR 2025, an AI and computer vision conference.



Source: Getty Images Plus/ metamorworks

“ModeSeq empowers autonomous vehicles with more accurate and diverse predictions of traffic participant behaviors,” said Yung-Hui Li, director of the Artificial Intelligence Research Center at HHRI. “It directly enhances decision-making safety, reduces computational cost, and introduces unique mode-extrapolation capabilities to dynamically adjust the number of predicted behavior modes based on scenario uncertainty.”

HHRI's collaboration with the City University of Hong Kong resulted in the presentation of "ModeSeq: Taming Sparse Multimodal Motion Prediction with Sequential Mode Modeling" at CVPR 2025. The technology introduces sequential pattern modeling and employs an Early-Match-Take-All loss function to enhance multimodal predictions. It also uses Factorized Transformers and a hybrid architecture for scene processing. Parallel ModeSeq, a refinement of the technology, won the Waymo Open Dataset Challenge's Interaction Prediction Track at the CVPR WAD Workshop, outperforming competitors from various esteemed institutions.

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