

## Editorial

We present the first issue of the sixteenth volume of the **Journal of Electronic Systems** with the following papers.

In the opening paper, “**Designing a complete filter for AI-Assisted or Inverse-Designed Wideband BPF,**” the authors outlined an AI-assisted inverse design methodology for a compact, ultra-wideband microstrip bandpass filter (BPF) that eliminates the need for conventional resonator topologies. This new design employs a pixelated conductive region optimized directly from electromagnetic performance objectives using artificial intelligence. This work ultimately developed an inverse electromagnetic design as a scalable and powerful alternative to classical synthesis techniques, with potential extensions to multi band and reconfigurable RF front-end components.

In the paper “**Context-Aware Scene Understanding for Autonomous Driving: Quantifying Semantic Dependencies, Complexity, and Perception Risk,**” the authors develop a principled framework for contextual intelligence in autonomous scene understanding, moving beyond isolated object detection toward holistic environmental interpretation. They quantified semantic dependencies across four integrated components. The findings proved a paradigm shift toward context-adaptive perception architectures that proactively allocate computational resources, adjust detection thresholds, and anticipate hazards based on environmental typology.

In the last paper, “**A Fuzzy Decision-Maker for Optimal Scheduling of Time-Shiftable Residential Loads in Smart Grids,**” the authors outlined a fuzzy logic based Fuzzy Decision Maker (FDM) for optimal scheduling of time shiftable residential loads. The proposed model jointly considered appliance demand power and the predicted aggregate residential load profile to determine an optimal delay time. The simulation results were promising, validating the effectiveness and scalability of the proposed approach.

We hope that the proposed research on this issue marks technical elegance in electronic systems research.

## Editors