

# MACHINE LEARNING FOR RF SIGNAL DETECTION AND IDENTIFICATION

RFML on AMD Versal™ AI Edge Adaptive SoCs and Ryzen™ AI Embedded



## OVERVIEW

Given increasingly complex and noisy electromagnetic environments, machine learning plays a key role in augmenting traditional RF methodologies and providing rapid responses to novel threats. Machine learning models can learn to distinguish relevant and irrelevant signals from wideband data, enabling them to extract only important data for further processing.

Our latest reference design, developed in collaboration with Expedition Technology, demonstrates NPU and GPU accelerated CNNs for wideband and narrowband spectrum analysis on Versal AI Edge and Ryzen AI Strix Halo, serving as a precursor to multi-stage RFML and cognitive EW.

## KEY FEATURES

- Real-time, over the air RF analysis
- Wideband RF signal detection and identification
- Narrowband RF signal modulation recognition



## ABOUT EXPEDITION TECHNOLOGY

Expedition Technology (EXP) designs, develops, and delivers innovative solutions with national impact for the defense and intelligence communities. We use machine learning, artificial intelligence, and other advanced algorithms, platforms, and technologies to solve our customers' most complex, demanding, and urgent C4ISR challenges. Our culture promotes individual growth and opportunity, prioritizes a collaborative team spirit, and invites the intellectually curious to solve challenging problems creatively. Headquartered in Northern Virginia's high-tech corridor, EXP is a rapidly growing, privately held company that pushes the boundaries of what is possible every day.

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