

TECHNICAL SUMMARY

SkyMavix combines machine learning and software engineering with embedded and wireless expertise for technically demanding work across aerospace and connected systems.

TOOLS & PLATFORMS

Machine learning & software Python, SciPy, MATLAB, Spark, Go, Redis, vLLM

Embedded & wireless Xilinx ZedBoard, HDL, embedded Linux, IEEE 802.11ac/ax/be, Wi-Fi 6E, WPA3, DFS, OpenSync, RDK-B, TR-181, TR-69, Kibana, Splunk, Mesh-Cloud

01 / MACHINE LEARNING & SOFTWARE ENGINEERING

Intelligence built on dependable data and software.

We turn spacecraft, sensor and operational data into useful intelligence, efficient models and reliable systems for engineering teams.

01 Spacecraft Telemetry Intelligence

- Detect anomalous behaviour, monitor spacecraft health and identify trends in time-series telemetry.
- Apply time-series machine learning to spacecraft and subsystem data.
- Perform scientific computing and data analysis using Python, SciPy and MATLAB.

02 Applied ML & Decision Systems

- Prioritise complex operational information and produce relevant, actionable outputs.
- Develop ranking and recommendation methods.
- Integrate models, operational data sources and software tools into decision-support workflows.

03 Efficient & Edge ML

- Run ML models within constrained compute and memory environments.
- Apply model optimisation and quantisation for efficient local inference.
- Export and serve suitable workloads using vLLM.

04 Data & Software Systems

- Transform operational and sensor data into reliable inputs for analytics, inference and downstream applications.
- Build production pipelines for data ingestion, processing and inference.
- Process large datasets using Spark.
- Develop backend APIs and concurrent services using Python, Go and Redis.

02 / EMBEDDED & WIRELESS ENGINEERING

Connected systems understood from hardware to operation.

We evaluate embedded and wireless systems through practical research, platform integration, performance evidence and repeatable testing.

01 Embedded Systems

- Evaluate communications algorithms and support embedded-system development through simulation and hardware integration.
- Run real-time algorithm simulations on Xilinx ZedBoard with MATLAB integration for HDL execution.
- Configure embedded Linux networking, including DNS, DHCP, FTP and boot processes involving QSPI flash, RAM and SD storage.
- Research PHY-layer preamble modulation and convolutional coding, including code puncturing and trellis efficiency.

02 Performance Analysis & Benchmarking

- Quantify wireless behaviour to support engineering evaluation and product comparison.
- Map coverage and measure throughput and capacity.
- Conduct competitive benchmarking and third-party performance characterisation.
- Evaluate performance under ISP-specific operating scenarios.

03 Wireless Technologies & Platforms

- Assess wireless features and platform behaviour across devices, software stacks and management layers.
- Work with IEEE 802.11ac/ax/be and related specifications, including 802.11k/v/w/h.
- Validate Wi-Fi 6E, WPA3, DFS, band steering and client steering.
- Test platforms and interfaces including OpenSync, RDK-B, TR-181, TR-69 and hardware abstraction layers.

04 Test Engineering & Automation

- Design wireless laboratories, test houses, test chambers and supporting network infrastructure.
- Develop automated test suites using Python and Linux shell scripting.
- Perform functional, stability and interoperability testing across mesh devices, APIs, data pipelines and control services.
- Investigate defects through log analysis using Kibana, Splunk and Mesh-Cloud.

START A CONVERSATION

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