

# Robotics integration & field engineering

I help robotics teams and technology vendors develop and integrate software, hardware, and algorithms, then test and debug them on the target system, from industrial machinery to uncrewed aircraft. For vendors, I also help their customers adopt the product, resolve field issues, and bring the findings back to engineering.

## WHERE I HELP

### Integration & development

I bring hardware and autonomy software together, develop missing functionality, and resolve issues across sensing, compute, controls, and communications. It often matters most ahead of a demo, pilot, or platform change.

### Perception & estimation

I develop real-time perception and estimation algorithms for real sensors and hardware, including state estimation, sensor fusion, and calibration. I build recorded-data tests and diagnostic tools to validate their behavior.

### Applications engineering & field support

I help assess product fit, train customer engineers, and resolve field issues. As the technical point of continuity between vendor and customer teams, I escalate with reproducible evidence and bring the findings back to engineering.

**Earlier-stage support:** architecture and implementation when the path to integration still needs to be established.

## SELECTED EXPERIENCE

### Shield AI · Autonomy Applications Engineer

As RSAF's primary applications engineer, I supported their team from SDK training to a successful search-and-rescue flight demonstration. Along the way, I led the first Hivemind integration onto Ascent Spirit with another engineer and a pilot, and turned it into scripted bring-up that, by my estimate, cut single-vehicle setup from about a week to about a day.

### MicroStar Tech · Algorithm Engineer

My internship project, LiDAR train-car tracking for loading control, entered production in 2021, and I kept extending it for new sensors, mixed cars, and shunted trains. I also built portal-crane dig-point planning, reclaimer layer detection, and the team's standard Kalman filtering library, with replay tools to inspect each result.

## HOW I WORK

### Align the work

I learn the operating context and what is getting in the way, then we agree on the evidence needed to judge the result.

### Build and verify

I implement and diagnose across the system, keeping decisions, limitations, and escalation clear between teams.

### Leave it usable

I leave useful diagnostics, development and test workflows, practical documentation, and engineers prepared to continue.

## WORKING TOGETHER

Focused projects, ongoing vendor support, and remote or onsite collaboration. We align expectations about my involvement, the next useful result, timing, and payment.

**Tell me about the system, the current obstacle, and the next milestone.**

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