

GrewSight-AI

Agentic AI Troubleshooting Assistant

Intelligent Field Support Powered by CrewAI
A Multi-Agent System for Equipment Troubleshooting

[GitHub](#)

Utilyst Team

10/29/2025



Utility Catalyst

The Challenge

Field Technicians Face Common Issues

- Equipment failures on-site with no internet connectivity
- Complex technical manuals difficult to search quickly
- Need for expert guidance when troubleshooting
- Time-consuming diagnosis of equipment issues
- Limited ability to share visual information for remote support



The Solution



A mobile-ready AI assistant that provides intelligent troubleshooting guidance through multimodal understanding and expert knowledge retrieval.

Key Innovation

Five specialized AI agents working together to understand problems, analyze images, search documentation, and provide step-by-step solutions.

1. Login Screen

A mockup of a mobile app login screen. The background is a dark teal color. At the top left, the time "9:41" is displayed. At the top right, there are three white dots. Below the status bar, the Utilyst logo is centered. Underneath the logo, the text "Welcome Back" is displayed in white, followed by "Sign in to continue troubleshooting" in a smaller white font. A white rounded rectangle contains the login form. Inside this rectangle, the text "Employee ID" is above a white input field with the placeholder "Enter your ID". Below this, the text "Password" is above another white input field with the placeholder "Enter your password". To the right of the password field, the text "Forgot Password?" is in a small teal font. Below the input fields is a large yellow button with the text "Sign in" in black. Below the button is a horizontal line with the word "or" in the center. At the bottom of the white rounded rectangle is a white button with a yellow icon of a person and the text "Sign in with SSO".

The Agent Team

Intake Agent

Understands user's problem and extracts key information

Document Agent

Searches manuals for relevant information

Image Agent

Analyzes photos and videos of equipment

Troubleshooting Agent

Provides step-by-step solutions

Coordinator Agent

Orchestrates the workflow and maintains session context

Key Features



Intuitive Navigation

Clean, simple interface designed for field technicians working in challenging conditions



Smart AI Chat

Conversational interface with step-by-step guidance and context-aware responses



Visual Diagnostics

Integrated camera for capturing equipment photos and error screens for analysis



Quick Actions

One-tap access to common tasks and recent troubleshooting sessions



Session History

Track all troubleshooting sessions with detailed reports and resolutions



Enterprise Security

Secure authentication with SSO support and encrypted data transmission

System Architecture



Mobile App Layer

Text, voice, and image input from field technicians

FastAPI Server

REST API with session management and authentication

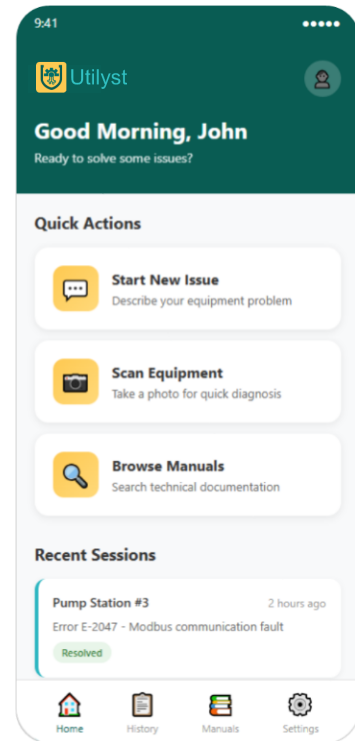
CrewAI Agent Team

5 specialized agents orchestrating the troubleshooting workflow

Knowledge Base

Vector store (ChromaDB) with technical manuals and documentation

2. Home Dashboard

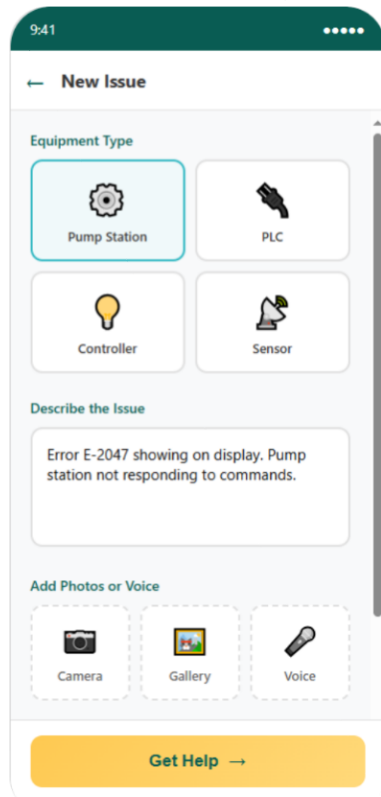


How It Works

- 1 **User describes issue:** "Error E-2047 on pump station"
- 2 **Intake Agent** extracts key details (error code, equipment)
- 3 **Document Agent** searches manuals for relevant sections
- 4 **Image Agent** analyzes photos (if provided)
- 5 **Troubleshooting Agent** provides step-by-step solution

Other Sections

3. New Issue Input



9:41

← New Issue

Equipment Type

Pump Station

PLC

Controller

Sensor

Describe the Issue

Error E-2047 showing on display. Pump station not responding to commands.

Add Photos or Voice

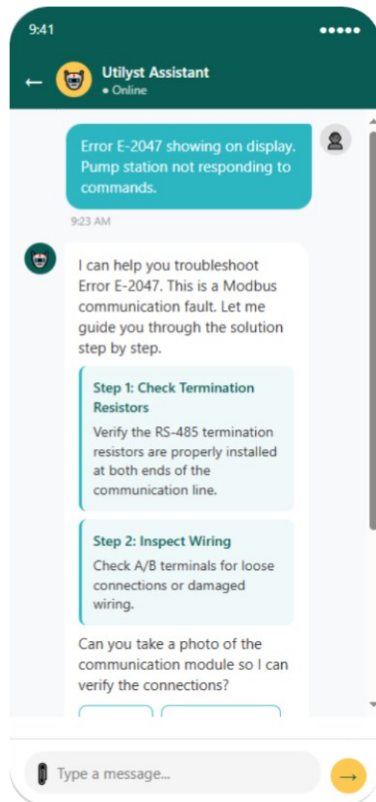
Camera

Gallery

Voice

Get Help →

4. AI Chat Interface



9:41

Utilyst Assistant
• Online

Error E-2047 showing on display. Pump station not responding to commands.

9:23 AM

I can help you troubleshoot Error E-2047. This is a Modbus communication fault. Let me guide you through the solution step by step.

Step 1: Check Termination Resistors

Verify the RS-485 termination resistors are properly installed at both ends of the communication line.

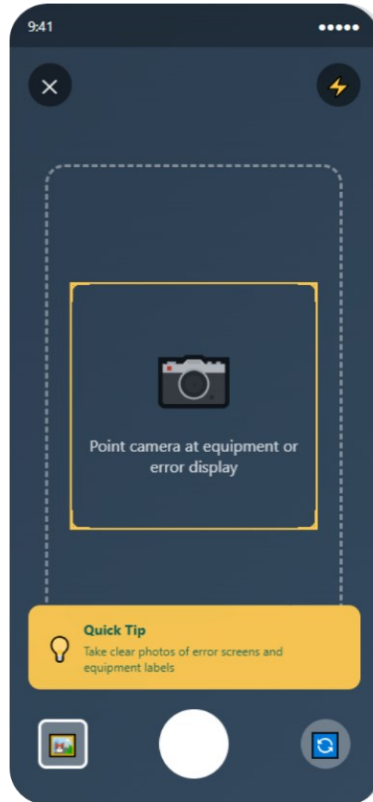
Step 2: Inspect Wiring

Check A/B terminals for loose connections or damaged wiring.

Can you take a photo of the communication module so I can verify the connections?

Type a message...

5. Camera Capture



9:41

×

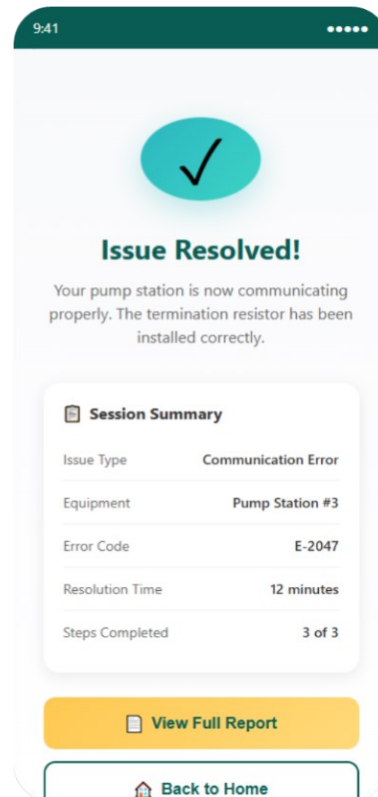
⚡

Point camera at equipment or error display

Quick Tip

Take clear photos of error screens and equipment labels

6. Issue Resolved



9:41

✓

Issue Resolved!

Your pump station is now communicating properly. The termination resistor has been installed correctly.

Session Summary

Issue Type	Communication Error
Equipment	Pump Station #3
Error Code	E-2047
Resolution Time	12 minutes
Steps Completed	3 of 3

View Full Report

Back to Home

Technical Stack

AI & Orchestration

- CrewAI (agent framework)
 - LangChain (RAG pipeline)
 - OpenAI GPT-4 / Claude
 - GPT-4 Vision
-

Data & Storage

- ChromaDB (vector store)
 - Redis (session mgmt)
 - PDF processing
-

Backend & API

- FastAPI (REST server)
 - Python 3.9+
 - Uvicorn (ASGI server)
-

Deployment

- Docker
 - Cloud platforms (AWS/GCP/Azure)
 - CI/CD ready
-

Real-World Use Cases

Equipment Troubleshooting

Technician encounters error code in the field, takes photo of display, receives instant diagnosis and repair steps

Installation Guidance

Installing new pump controller, shows wiring photo, system validates connections and guides through setup

Preventive Maintenance

Running scheduled maintenance, follows AI-guided checklist with visual verification at each step

Training Support

New technicians use system as learning tool to understand equipment and procedures

Team



John Armin
PhD, PE

Founder and CEO
with extensive
experience in AI for
environmental systems.
Former Director of Data
Science.

Zohreh Doosti
MBA

Co-founder and
Head of BI with a
background in
finance and analytics.
Built dashboards for
logistics.

Thanks for the crewai Support



Our Goal is:

“Leverage the machine to do the **routine**, leverage the humans to do the **remarkable**.”



The AI Catalyst for Modern Utilities

Thank you!