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

Utilyst

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

© 2025 Utilyst. All rights reserved. | Confidential – Please do not share.

The Solution

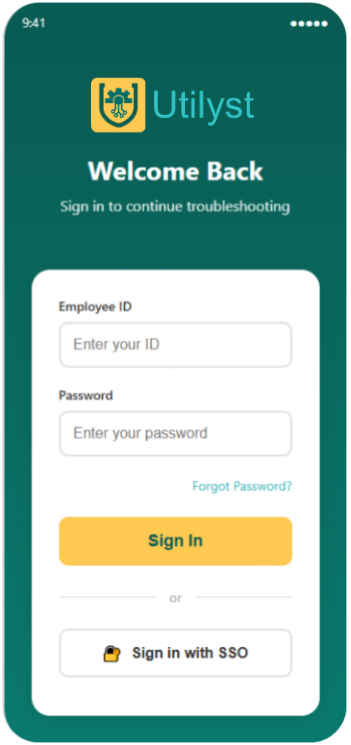
Utilyst

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



© 2025 Utilyst. All rights reserved. | Confidential – Please do not share.

The Agent Team

Utilyst

🎯 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

© 2025 Utilyst. All rights reserved. | Confidential – Please do not share.

Key Features

Utilyst

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

© 2025 Utilyst. All rights reserved. | Confidential – Please do not share.

System Architecture

Utilyst

Mobile App Layer

Text, voice, and image input from field technicians

FastAPI Server

REST API with session management and authentication

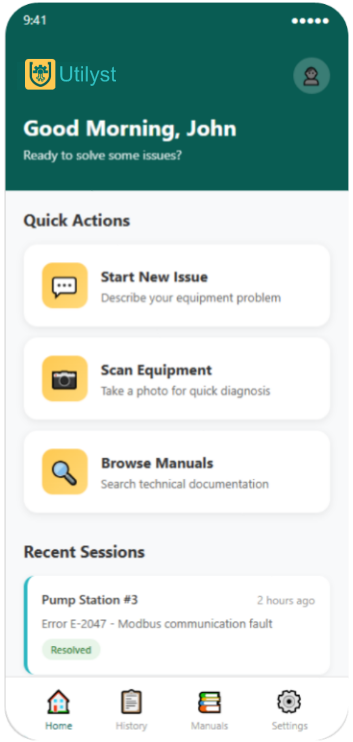
CrewAI Agent Team

5 specialized agents orchestrating the troubleshooting workflow

Knowledge Base

Vector store (ChromaDB) with technical manuals and documentation

2. Home Dashboard



© 2025 Utilyst. All rights reserved. | Confidential – Please do not share.

How It Works

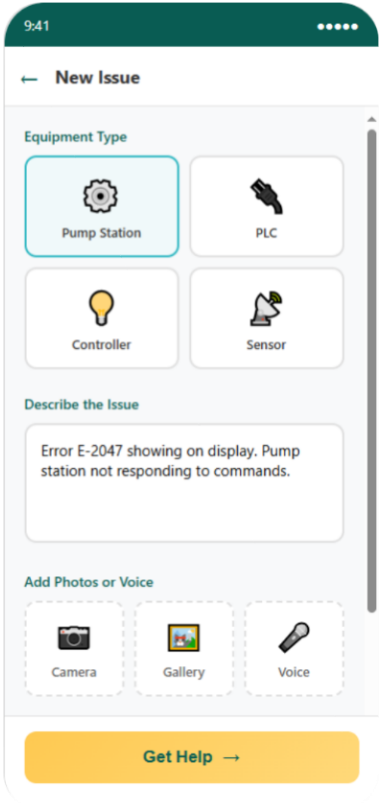
1. **User describes issue:** "Error E-2047 on pump station"
2. **Intake Agent** extracts key details (error code, equipment)
3. **Document Agent** searches manuals for relevant sections
4. **Image Agent** analyzes photos (if provided)
5. **Troubleshooting Agent** provides step-by-step solution

© 2025 Utilyst. All rights reserved. | Confidential – Please do not share.

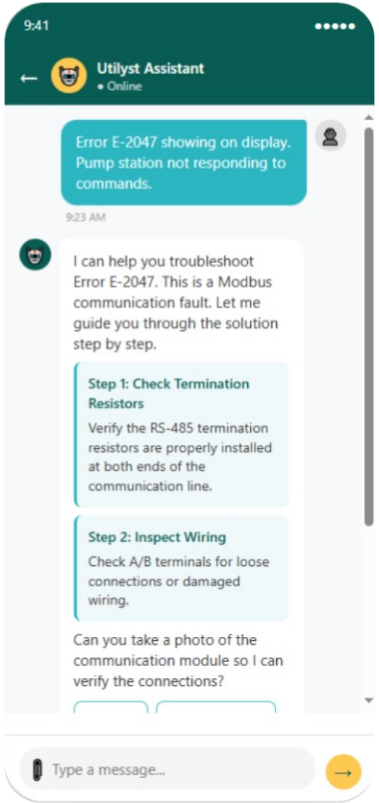
Other Sections

Utilyst

3. New Issue Input

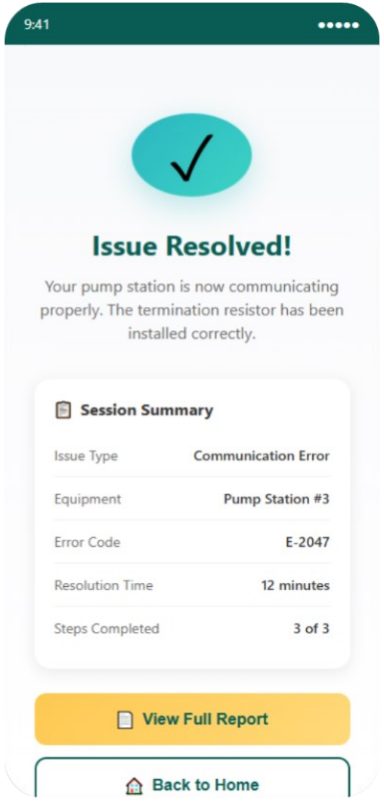


4. AI Chat Interface



5. Camera Capture

6. Issue Resolved



© 2025 Utilyst. All rights reserved. | Confidential – Please do not share.

Technical Stack

Utilyst

AI & Orchestration

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

Backend & API

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

Data & Storage

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

Deployment

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

© 2025 Utilyst. All rights reserved. | Confidential – Please do not share.

Real-World Use Cases

Utilyst

🔧 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

© 2025 Utilyst. All rights reserved. | Confidential – Please do not share.

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.

© 2025 Utilyst. All rights reserved. | Confidential – Do not share.

Thanks for the crewai Support

© 2025 Utilyst. All rights reserved. | Confidential – Do not share.

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!