

# Michael Russo

Senior Software Engineer — AI Automation, Computer Vision/OCR, Flutter Mobile, .NET & TypeScript



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I design and ship end-to-end systems that connect real businesses to modern AI: cross-platform apps, secure APIs, streaming UX, CRM automation, and computer-vision/OCR document pipelines. Expert at modernizing legacy platforms without disrupting ongoing business operations.

## Featured Impact

### DiSC Mobile & DPS — Logistics Mobility + Document Capture Platform

Cross-platform enterprise platform for transportation & freight operations

Founder / Co-Owner (W-Interactive)

~\$1.3M annual revenue

Long-running enterprise platform for transportation and freight operations: driver workflows, real-time status, GPS tracking, and high-volume proof-of-delivery document capture + processing. Integrated directly with Profit Tools logistics systems through custom ASP.NET web services installed on client infrastructure.

- Cross-platform deployment (iOS + Android)
- Document capture pipeline (deskewing, whitening, extraction) + automated POD generation
- Operational automation via Python scripting
- Secure integration with client-installed Profit Tools logistics systems

Android / iOS

Flutter

Xamarin

C#

ASP.NET

.NET WCF

Python

SQL Server

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## Technical Skills

### Core Programming Languages

TypeScript

Python

C#

Dart

VB / VB.NET

JAVA

C / C++

JavaScript

SQL

HTML/CSS

### AI, Machine Learning, Computer Vision & OCR

Agentic

ChatGPT / OpenAI

Claude

Gemini

LM Studio

Ollama

MCP

PyTorch

TensorFlow

Scikit-Learn

OpenCV

Tesseract / docTR OCR

## Mobile & Client Apps

Flutter / Dart   Android   iOS   Xamarin   .NET MAUI   .NET Blazor / Web Assembly   Windows Forms   WPF

## Backend, APIs & Real-Time

Node.js / Express   React   ASP.NET Core   .NET Signal-R   REST   WebSockets   Socket Programming

## Cloud, Data & Infrastructure

AWS   Azure   Supabase   PostgreSQL   SQL Server   SQLAnywhere   Redis   MongoDB   DynamoDB  
Docker

## Project Showcase

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### Detect — Blueprint Object Detection

Streamlit demo detecting countertops, sinks, and appliances in architectural blueprints via trained Mask R-CNN model.

### Scale — OCR Measurement Extraction

Extracting blueprint scale via OCR (docTR) to compute real-world dimensions, areas, and generate material cost estimates.

### Segment — Instance Segmentation

Pixel-perfect instance segmentation masks isolating exact countertop shapes for area computation and material estimation.

**Model:** Mask R-CNN with ResNet-50-FPN backbone · **Training:** 10,000+ annotated blueprint images · **Infra:** Trained via Riverpod on large GPU clusters · **Demo:** Streamlit interactive frontend

### Dashboard & AI Provider Setup

Central dashboard for managing AI providers, prompts, scraping jobs, API keys, and analytics. Configure providers like OpenRouter and LM Studio with model selection and API key management.

### Prompt Engineering & Configuration

Create and manage scraping prompts with target URLs, custom instructions, system prompts, provider/model selection, output format (JSON/XML), and fetch method (headless browser or direct).

### Execution, Monitoring & Results

Monitor crawling jobs with status tracking, filtering, and pagination. View detailed job results including AI processing metrics (tokens, cost, confidence) and validated structured JSON output.

**Backend:** .NET 8 / ASP.NET Core · **Frontend:** React SPA · **Scraping:** Headless browser (Playwright) · **AI:** OpenRouter, LM Studio, Anthropic, OpenAI providers · **Output:** Structured JSON/XML with validation

### Complex DSP Concepts

Excerpt from a Digital Signal Processing textbook. The material is dense, mathematical, and difficult to parse for beginners or high school students.

## AI Simplification (LM Studio)

MathMCP server connected to LM Studio local LLM. The agent ingests the textbook image, simplifies the concepts for a high school level, and generates practice questions.

**Tech:** Model Context Protocol (MCP) · **Model:** Local LLM (LM Studio) · **Input:** Visual / OCR + Text · **Goal:** Educational simplification & accessibility

## Work & Impact

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### W-Interactive — Founder / Co-Owner, Lead Architect

Architected and maintained enterprise mobility and document intelligence platforms, providing long-term client support, seamless system integrations, and continuous modernization.

- End-to-end ownership across mobile, backend, integrations, and automation.
- Modernized legacy client apps/services while preserving uptime and workflows.
- Delivered OCR/CV pipelines and automated POD generation in production.

Flutter

C# / .NET

Python OCR

SQL Anywhere

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### Basil & "Annie" AI Sales Automation — AI Automation Architect

Contributed to an AI-driven CRM automation platform for automotive dealerships, automating lead capture, qualification, follow-ups, and CRM actions.

- Built chat widget capturing leads and parsing VIN context on vehicle pages.
- Implemented Node.js service routing leads into VinSolutions workflows.
- Developed TypeScript agent skills for SMS/email/CRM operations.

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### InCommercial AI Chat Agent — Backend Security & Streaming

Security hardening + real-time AI streaming + RAG integrations for commercial real estate.

- Engineered JWT auth with refresh token workflows and significant reliability improvements.
- Polished and enhanced the front-end chat agent interface for a seamless user experience.

incommercialre.app →

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## Dialer + CRM Integrations — Real-Time Communication Systems

Architected in-house dialing infrastructure and seamless CRM automation integrations.

- Built a custom socket-based dialing server (C#/.NET/WPF).
- Developed a ScreenPop plugin for HubSpot and Redline CRM integrations.
- Implemented chat widgets with lead capture and complex SMS/email automation workflows.

## Projects & Innovation

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### SmartCoder — AI Developer MCP Server

MCP server connecting AI coding agents to local environments

Model Context Protocol server for semantic code search with embeddings, automated file editing + analysis, and OCR-based visual inspection workflows. Designed for local LLM setups like LM Studio.

Python FastMCP ChromaDB SentenceTransformers OpenCV PyTesseract

### Countertop (BlueprintCV)

Computer Vision for architectural blueprint analysis

Object detection + OCR scale extraction system trained on 10,000+ blueprint images. Detects countertops and appliances with a Streamlit demonstration frontend.

Python PyTorch OpenCV docTR Streamlit

[View showcase](#) → (#showcase)

### Task3r — AI Task Management Platform

Conversational AI task ops with serverless AWS backend

AI-powered task management for solopreneurs: chatbot interface, cloud-native serverless backend, companion marketing website.

Flutter AWS Lambda API Gateway Cognito SNS Bedrock S3

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### ScraperAI Platform

AI-assisted web scraping with structured output

Configurable scraping system supporting local models or cloud LLMs, outputting structured JSON/XML data. Used for VIN extraction from dealership listings.

.NET 8 ASP.NET Core React LLM APIs

[View showcase](#) → (#showcase)

### MathMCP

Math education MCP server

MCP server for math education: converts complex text into simplified explanations, generates practice problems, interprets notation.

Python MCP

[View showcase](#) → (#showcase)

## **Color Fluff**

Mobile photo-to-coloring-book converter

Mobile application converting photos into coloring book or line-art images using on-device image processing.

Flutter Dart OpenCV

## **Insurance Mobile App**

Asset tracking & claim reporting

Mobile app allowing users to track valuables and generate insurance claim reports with secure cloud storage.

Flutter Supabase

## **Steward Mobile**

Field service management platform

Service industry mobile platform for house cleaners and field services, connected to enterprise ASP.NET backend systems.

Flutter ASP.NET Core

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