

Portfolio Samples

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Independent Projects

Coding is my job, hobby and livelihood. Here are a few things I've created or helped to create of which I'm most proud.

Viands

github.com/scarabdesign/Viands

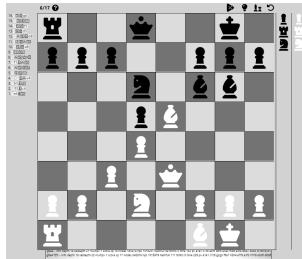


Personalized shopping list program written with .NET8 MAUI Blazor and an SQLite store. The back-end API was written with NestJS/NodeJS/ExpressJS with a PostgreSQL store.

Viands is a suite of applications for Windows, iOS and Android (more platforms to come) that allows a user to add products and line items to shopping lists and mark them off as they shop. Also boasts a barcode scanner for easy product additions and a cloud backup scheme.

Chess

chess.pointlesswaste.com

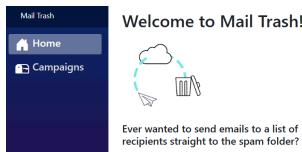


This is a simple chess application coded in React 18 with Vite and a NestJS API. I'm using a WebSocket to communicate with the chess AI Stockfish.

You can view the source code on my GitHub page: github.com/scarabdesign/portfolio

MailTrash

pointlesswaste.com



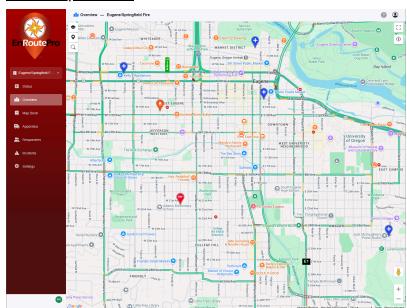
Here is a sample email campaigns application that I created as a proof of concept. It's written in C# using .NET Aspire and deployed to a K8s cluster with Helm.

You can view the source code on my GitHub page: github.com/scarabdesign/MailTrash

Perpetua Technologies, LLC

EnRoutePro Cloud

enroutepro.com



EnRoutePro Cloud is a cloud-native computer-aided dispatch (CAD) and resource management platform built for fire departments and emergency services. It provides real-time incident dispatching, apparatus and personnel tracking, map-based situational awareness with integrated fire detection data, and multi-channel alert delivery via push notifications, SMS, and email. The platform supports both web-based dispatch centers and mobile field units, enabling coordinated emergency response across distributed teams.

The system manages the full lifecycle of emergency operations — from CAD email ingestion and incident creation through unit dispatch, en-route tracking, and post-incident reporting. Built on .NET 10 with a Blazor Server frontend, RESTful API layer, and SignalR hubs supporting 200K+ concurrent connections, it delivers real-time updates to dispatchers and field personnel simultaneously. Structured logging, distributed tracing, and integrated mapping with Google Maps and NASA FIRMS fire detection provide operational intelligence at every level.

EnRoutePro Cloud is a ground-up modernization of the legacy EnRoutePro platform, consolidating 63 projects across 19 solutions into a streamlined 11-project architecture — an 83% reduction in codebase complexity. The monolithic 6,700-line API handler was decomposed into 38 RESTful controllers with OpenAPI documentation, async coverage grew from 8% to 37%, and test coverage expanded 31x from 7 to 217 test files across xUnit, Playwright, and Jest. Infrastructure moved from Windows Server, IIS, and SQL Server to Linux containers with PostgreSQL and PostGIS, eliminating proprietary database licensing costs and enabling deployment on minimal infrastructure.

AI-assisted development with Claude Code accelerated the modernization effort, driving automated test generation, code migration, architectural refactoring, and documentation. The legacy custom WebSocket implementation was replaced with SignalR hubs, and the platform adopted structured logging with Serilog, Seq, and OpenTelemetry for full observability. Orchestrated with .NET Aspire and Docker, EnRoutePro Cloud delivers a maintainable, cost-effective foundation positioned for continued growth.

EnRoutePro 4

enrouteapp.com



Video demo available at seanhankins.com/samples

Here is a quick demo of the latest EnRoutePro version in its fledgling state. It shows the basic incident list, fed by the latest emergency incidents from the state's EMS reporting system, and a details panel to give more information per incident.

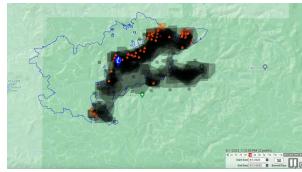
There's also a Map Book feature that allows responders to view digitalized documents containing pertinent emergency information like fire hydrant locations and building escape plans.

The app also allows responders to set up notifications to get notified when other personnel or apparatus are dispatched to an incident.

This application was written in .NET 9 MAUI and was busted out in about a month. Much more is planned on the app, and it's great fun to work on.

Active Fire Animations

enrouteapp.com



Video demo available at seanhankins.com/samples

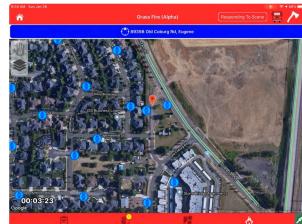
This is a small part of an application that helps municipal fire agencies track incidents, apparatus and personnel in active response.

The video on the right is an animation of part of the 2023 Bedrock fire east of Eugene/Springfield. The data is from stored fire hotspot sources from NASA (MODIS/VIIRS/GOES), and the outline is the InciWeb boundary for the fire.

The tool animates over buckets of time slots per day. The color of the points reflects the relative hotspot temperatures and the dark shapes are the affected ("burned") areas.

EnRoutePro 3

enrouteapp.com



Video: youtu.be/9QN-uOg6lnw

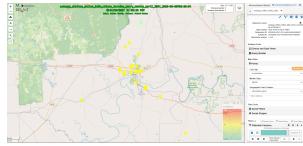
EnroutePro is a suite of mobile applications used by fire agencies to track and manage active fire/medical incidents. The application is supported on Windows, iOS and Android and is intended to be installed on devices in the emergency vehicles and personal phones.

The clients communicate to the ERP API servers with Web Sockets and POST/GET requests. There is also a management back-end that allows managers to remotely assign and track responders.

Moonshadow Mobile, Inc

DB4IoT

moonshadowmobile.com



Video: youtu.be/ysnUElHeZw0

Db4IoT is a product used by any organization or government entity who needs to collect and analyze traffic patterns and visualize big data sets on maps and graphs. My part in the team was mostly the front-end interface the users see as well as some management back-end functionality and other services.

VoterMapping

moonshadowmobile.com

Video: youtu.be/o1_gCiRy8GM

VoterMapping was a web application that tracked public voter history and visualized them over maps. Tools allowed users to do analysis, draw walking lists, draw bounding shapes, masks, choropleths and more.

Ground Game

moonshadowmobile.com

Video: youtu.be/UnhP9rGa55Q

Ground Game was a mobile application for iOS and Android that aided political canvassers in the field. Using the VoterMapping back-end, canvassers would fill out questionnaires and sync them back to the server.