PORTFOLIO

Since 2012

Ali KILIC

Head of Geospatial Engineering & Solutions Architect

PORTFOLIO SCOPE :

- Personal Information and CV
- Front-End and Back-End Skills
- Database and Mobile Skills
- GIS Skills
- Education and Work Experience
- Projects and Tools
- Open-Source Libraries

CONTACT ME

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May 4, 2025   Izmir, Türkiye

Ali Kilic

Hello,
The document you've started reading has been prepared to give you a more detailed understanding of my professional skills. For those who prefer a quick overview, you can find my CV on the next page.

In the projects included in this portfolio, the front-end, back-end, software architecture, and design were all created by me. Due to confidentiality agreements, client projects falling under privacy constraints have not been included.

New projects are continuously being added to my portfolio, and the beginner to intermediate-level works I created earlier are gradually being replaced with more advanced ones.

To project owners or employers who are interested in working with me, I'd like to say that I am someone who truly enjoys my profession. That's why I aim for each of my projects to turn into a work of art. As someone who considers himself an expert in this field, my greatest goal is for the software I develop to make a positive contribution to society.

The projects and teams I have led have never suffered from delays or shortcomings. The project processes have always been carried out in a disciplined manner—from planning the steps to final delivery.

Based on the feedback of the teams I have built with a focus on merit, I can say that I have a warm-hearted, open-minded, and honest personality.

Outside the scope of my portfolio, if I were to describe myself personally: I'm someone who enjoys life, has a positive outlook, is interested in art and science, and spends leisure time swimming, playing tennis, and skiing. I pursue these activities with great joy in the time I'm not working.

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Tags

- Full-Stack GIS Developer
- GIS Project Management
- GIS Project Architect
- Geospatial Database Management
- Team Lead
- Spatial Analysis
- Remote Sensing Analysis
- 3D Model Viewing-Publishing
- Mobile GIS Developer
- GIS Analyst
- GIS Engineer
- GIS Specialist
- GIS Consultant

Languages

Turkish : Native

English : B2

Azerbaijan Lang : C1

Awards

2016
Ministry of Environment and Urbanization
Web Automation of Cultural Heritage

Ali KILIC
Geomatics Enginner & Senior Full-Stack GIS Developer

The coding journey I began at a young age eventually evolved into a focus on developing GIS software, especially through my studies in Geomatics Engineering. While I do develop code outside the field of GIS, the projects that bring me the most joy are dynamic GIS applications that require academic and engineering expertise. I truly enjoy what I do. All the coding work presented in my portfolio consists of topics I've explored in my spare time purely for the pleasure of it. I hope you'll take a moment to review them.

Work Experience

2013 – 2017
Konya Metropolitan Municipality

GIS Developer | Full-Time
I worked here in a role similar to an R&D specialist. I regularly prepared demos using newly emerging GIS technologies and presented them to the department. Emra Sert was our department manager, and he greatly supported me in learning many of these technologies.

2017 - 2020
Başkent Naturalgas Distribution Company

GIS Developer | Full-Time
I was developing GIS software used by both field and office staff. We presented our work to our unit chief, Selçuk Özen, who then helped deliver it to the personnel.

2020 - current
GISLayer

GIS Developer | Remote, Part-Time
GISLayer is a company I established to issue invoices for the work I do for international clients. Additionally, Web GIS Editor is a product of this company and is a SaaS project. Apart from that, the companies I have provided services to include...

1. **Infrapedia** - Remote, San Francisco, CA, ABD
2. **TechMaven Geospatial** - Remote, Miami, FL, ABD
3. **Cairn Advisor** - Part-Time : Atlanta, GA, ABD
4. **MinA LLC** - On Site, CTO, Baku, Azerbaycan

Education

2008 - 2015
Selcuk University

Geomatics Engineering
He has acquired knowledge in Geographic Information Systems, surveying, geodesy, remote sensing, photogrammetry, urban planning, and cadastre.

Coding History

In 2006, he began learning the Dreamweaver program, gaining knowledge in HTML, CSS, and JavaScript. What started as a hobby evolved during university studies, where he/she developed skills in PHP and MySQL. Deciding to pursue a career in the GIS sector—where software and geomatics engineering most closely intersect—he combined two fields he enjoys working in.

Coding and GIS Skills

Openlayers, Mapbox GL JS, CesiumJS, Leaflet, VueJS, ReactJS, React Native, Flutter Dart, Java Spring Boot, NodeJS, Python, .Net Webservice, Geoserver, Map server, ArcGIS, QGIS, Mapinfo, FME, PostgreSQL, PostGIS, Oracle Spatial, ElasticSearch, Geopackage, SQLite, SAP, SCADA

References

Emra Sert
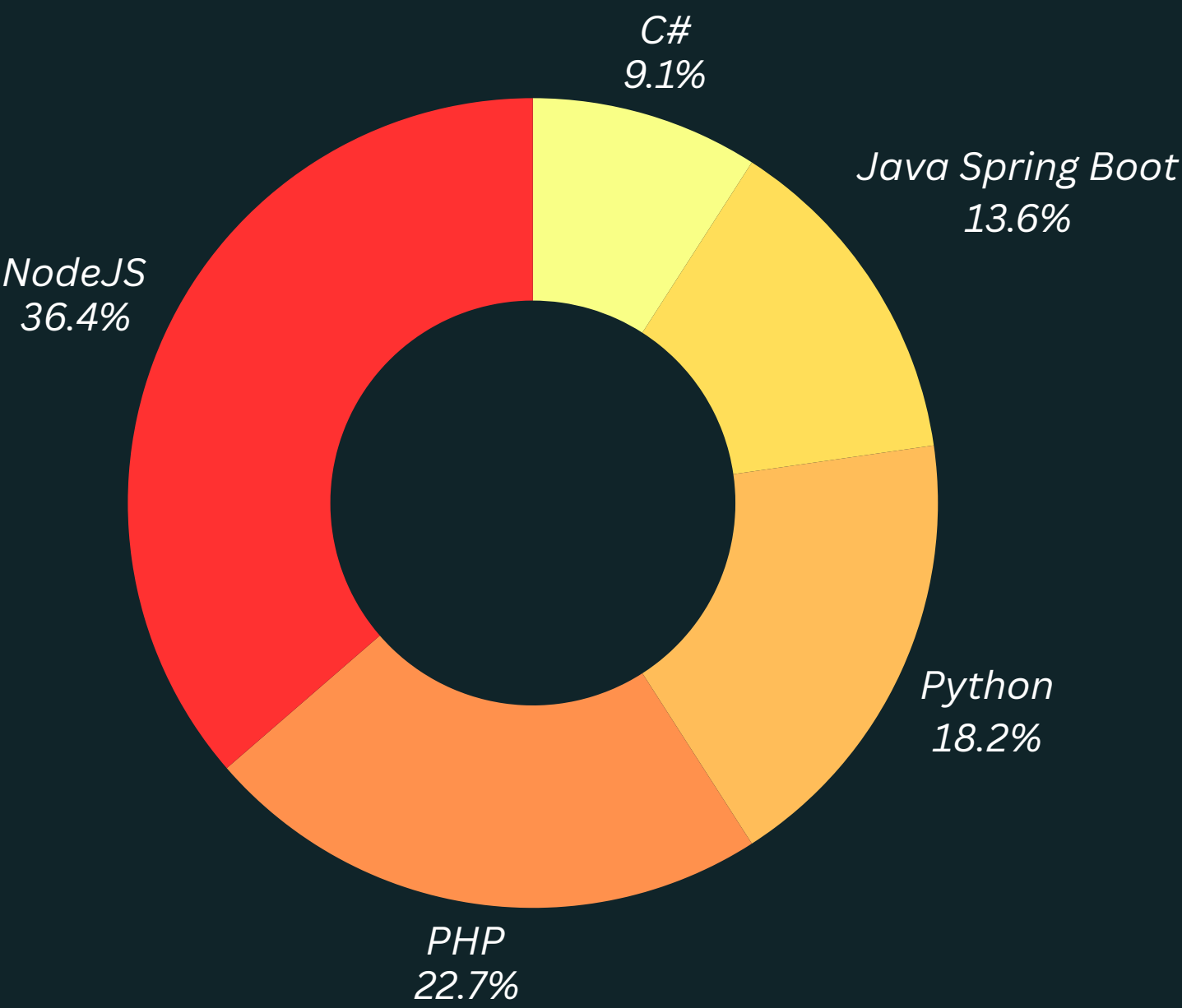**Directorate of Geographic Technologies**
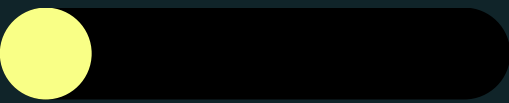Ministry of Environment and Urbanization

Selçuk Özen
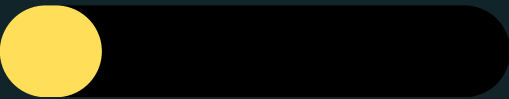**Başkent Naturalgas Distribution Company**
GIS Lead

BACK-END SKILLS

C#
9.1%

Java Spring Boot
13.6%
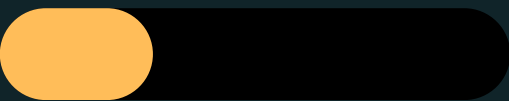
NodeJS
36.4%

Python
18.2%

PHP
22.7%

C# & .Net Web Services- 2 Years

Java Spring Boot - 3 Years

Python - 4 Years

PHP - 5 Years

NodeJS - 8 Years

FRONT-END SKILLS

Svelte
6.3%

Tailwind
12.5%

HTML5 + JS + CSS
46.9%

ReactJS + Next
15.6%
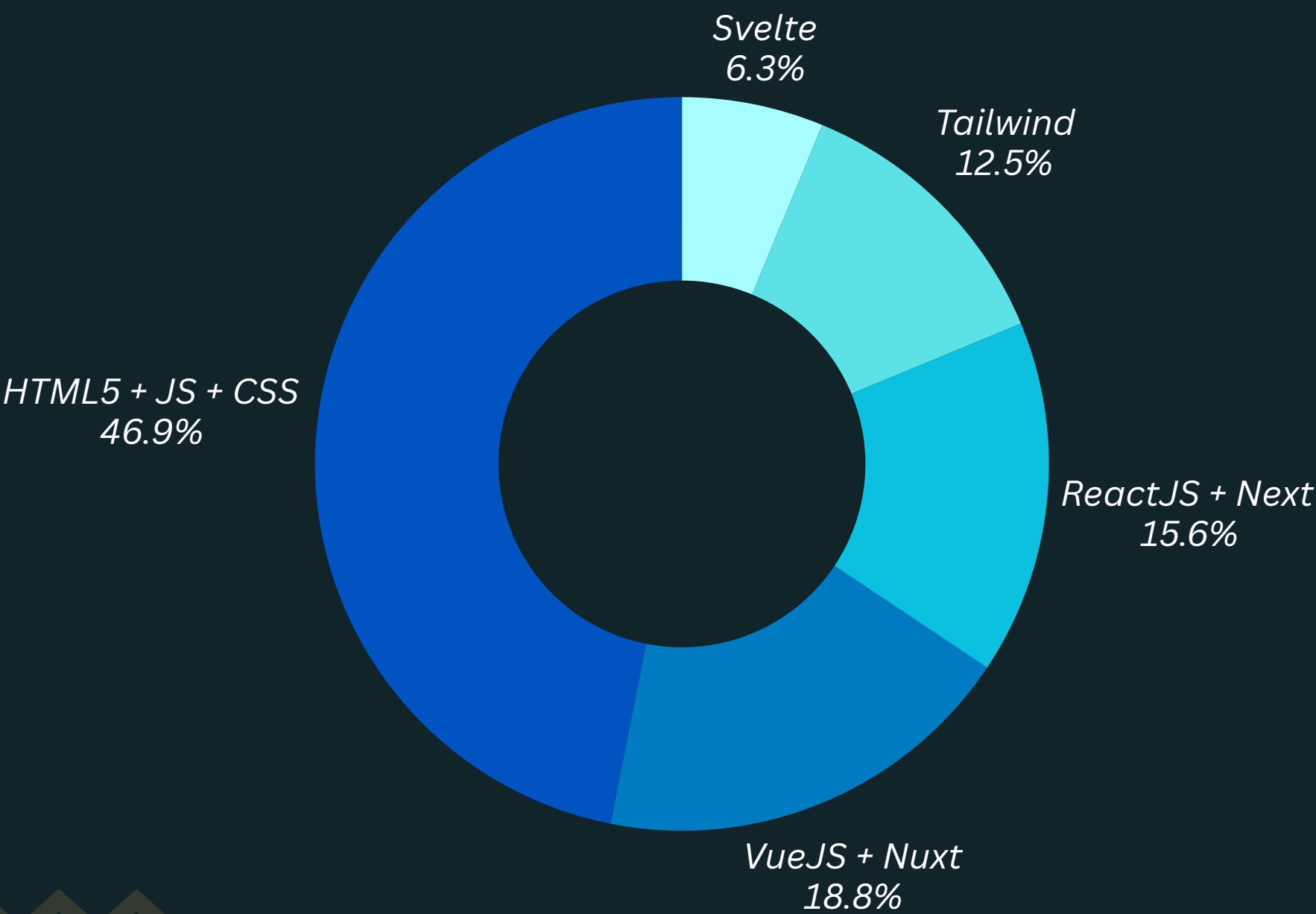
VueJS + Nuxt
18.8%

Svelte - 2 Years

Tailwind - 4 Years

ReactJS + Next - 5 Years

VueJS + Nuxt - 6 Years

HTML5 + JS + CSS - 15 Years

DATABASE SKILLS

ElasticSearch
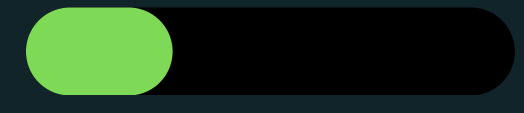9.1%

PostgreSQL PostGIS
31.8%

Sqlite
13.6%

MySQL
22.7%

Oracle Spatial
22.7%
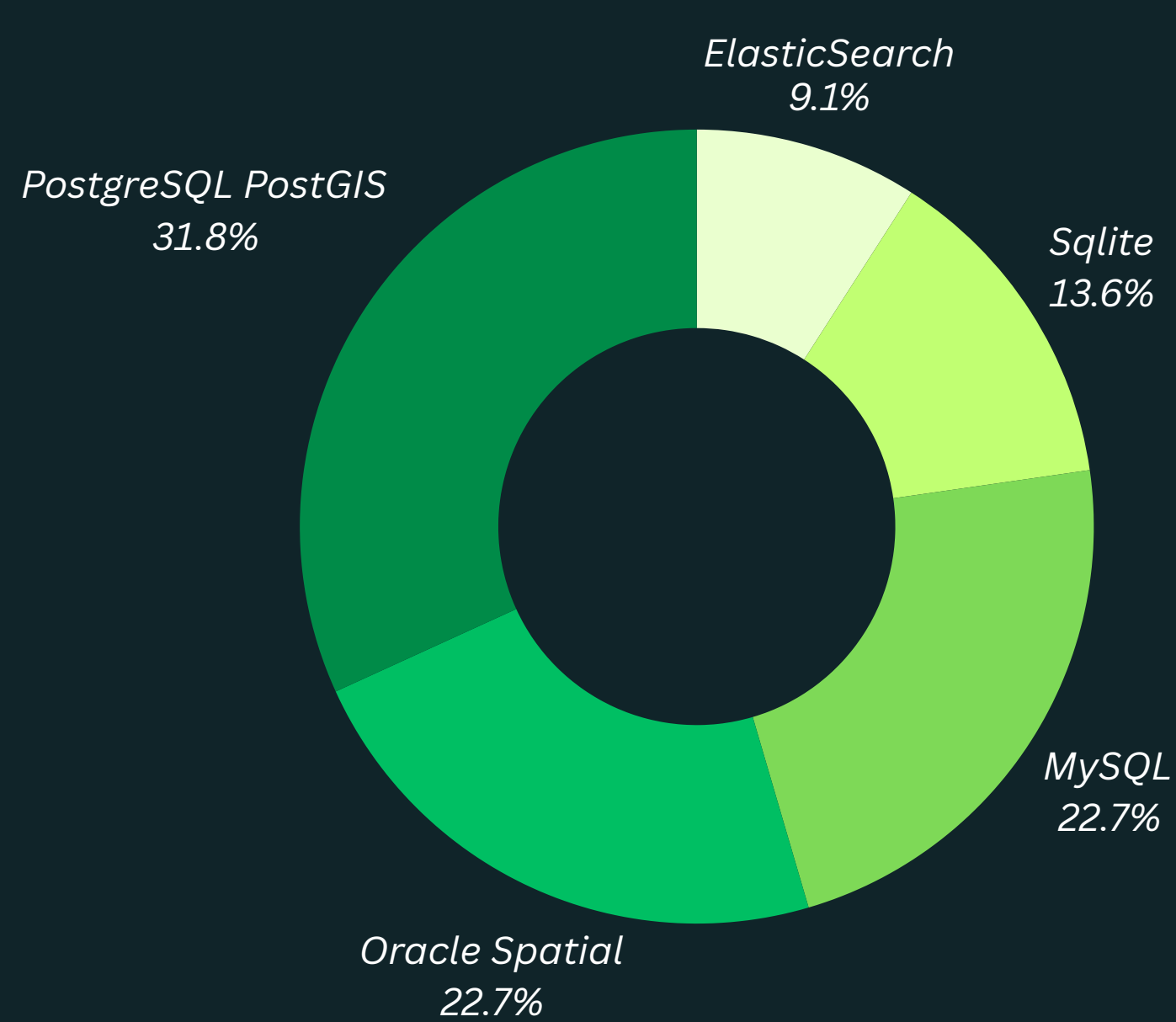
ElasticSearch - 2 Years
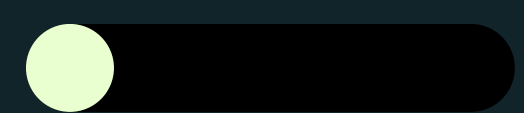
Sqlite - 3 Years

MySQL - 5 Years

Oracle - 5 Years

PostgreSQL - 7 Years

MOBILE SKILLS

React Native
18.2%

Flutter Dart
54.5%
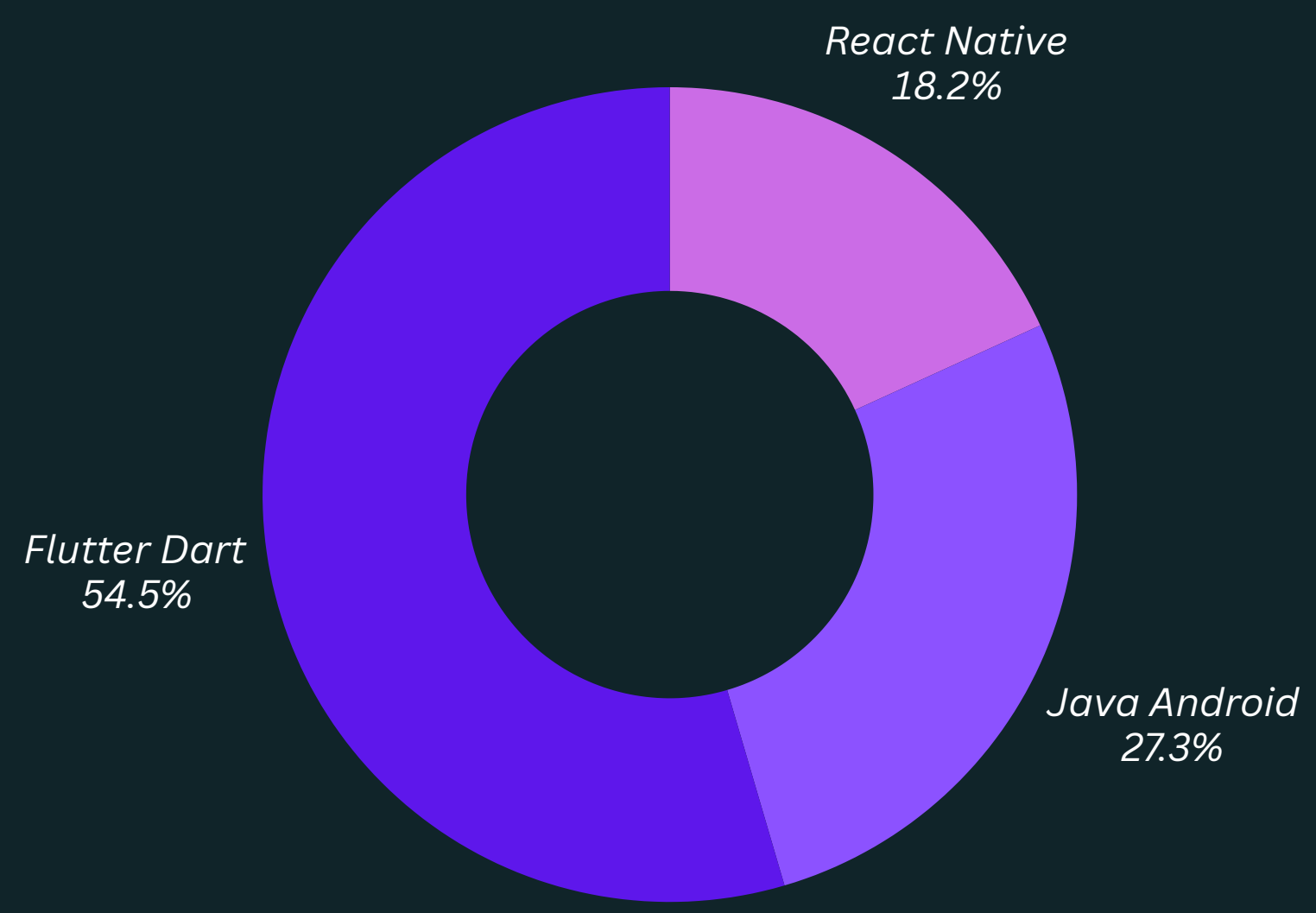
Java Android
27.3%

React Native - 2 Years
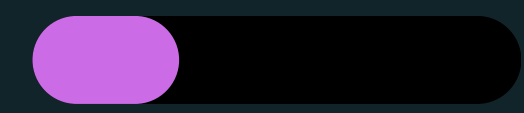
Java Android - 3 Years

Flutter Dart - 6 Years

GIS SKILLS

Front-End GIS Skills

OpenLayers
9 Years

Mapbox GL JS
6 Years

Leaflet JS
4 Years

Cesium JS
3 Years

Google Maps
2 Years

Back-End & Database GIS Skills

PostGIS
7 Years

GDAL - OGR
5 Years

Oracle Spatial
5 Years

Geopandas
4 Years

OpenCV
2 Years

GIS Programs Used

GeoServer
10 Years

QGIS
7 Years

ArcGIS
6 Years

MapInfo
3 Years

FME
2 Years

EDUCATION & WORK EXPERIENCE TIMELINE

2008 - 2015

Education
Selcuk University
Geomatics Engineer

July 2013

InternShip
Konya Metropolitan
Municipality

2014-2017

GIS Developer
Konya Metropolitan
Municipality

2017-2020

GIS Developer
Ankara Baskent Naturalgas
Distribution

2020 - Current

Founder
Setup GISLayer

Covid Situation

Future
Open to Remote

Now
Open to Work

2022-2024

Full-Time Hybrid
CTO at Mina LLC
Baku, Azerbaijan

2020-2022

Part-Time Remote
GIS Developer at Infrapedia
San Francisco, CA, USA

2020-2025

Part-Time Remote
GIS Developer at
TechMaven Geospatial
Miami, FL, USA

Future
Open to Full-Time

Future
Open to Hybrid

Future
Open to Relocation

Contact Information

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3D REAL-TIME FLIGHT TRACKING

This project was presented as a challenge by the technical team of **Baykar Technology** and was successfully completed. The goal of the challenge was to track 10,000 flights—each with predefined departure and landing points—in real time on a map. Users would be able to select an aircraft on the map, communicate with its pilot to assign a new mission location, and view the aircraft's live movements directly on the interface.

Front-End Technologies

- React JS & Redux
- Mapbox GL JS
- OpenLayers
- TreeJS & Deck.GL
- Vector Tile
- Tailwind CSS
- Socket.io Client

Back-End Technologies

- NodeJS + NestJS
- PostgreSQL + PostGIS
- Vector Tile Server
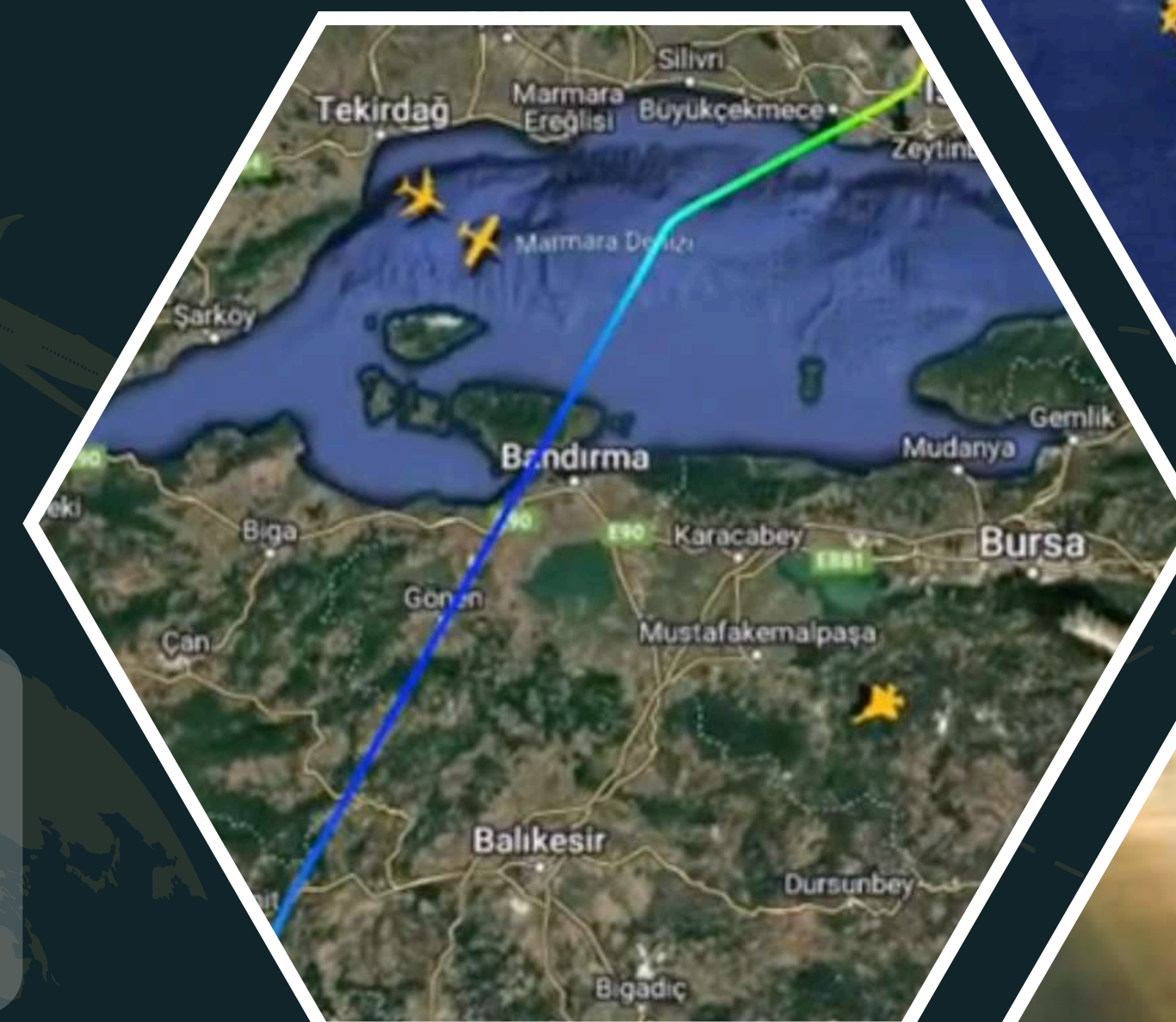- Socket.io Server
- TurfJS
- Swagger

Mobile Technologies

- React Native
- Mapbox GL JS
- Socket.io Chatbox
- 3D Model Viewer

Click and Check

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REMOTE SENSING ANALYSIS & RASTER CALCULATOR

The software I have developed works with satellite imagery from sources such as Landsat 5 TM, Landsat 8 OLI, and Sentinel 2 MSI. All operations are performed on the client side. Based on the available band combinations, it can calculate various spectral indices such as NDVI, NDWI, NBR, NPCRI, NDSI, NDGI, and NDMI, allowing users to analyze environmental factors like vegetation health, water presence, fire impact, and snow cover. Offered free of charge, this tool enables fast and efficient analysis of medium-scale GeoTIFF files.

Front-End Technologies

- VueJS 3 + Vuex
- OpenLayers
- Plotty
- geotiff JS
- Semantic UI

Raster Data Analysis

- **NDVI**: Healthy Vegetation Analysis
- **NDWI**: Water Presence Detection
- **NBR**: Fire Impact Assessment
- **NPCRI**: Chlorophyll Pigment Ratio
- **NDSI**: Snow Cover Identification
- **NDGI**: Glacier Area Detection
- **NDMI**: Moisture Content Analysis

Raster Data Source

- Landsat 8 OLI
- Landsat 5 TM
- Sentinel 2 MSI
- IBGR
- RGBI

Click and Check

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MOBILE, FIELD DATA COLLECTOR

This mobile application was developed with Flutter for GPS-based geometric data collection and visualization in the field. It also supports formats such as SHP, DXF, KML, and GeoJSON stored in the cloud, allowing users to view and export data on the map. The app enables sharing collected data with other users using the same system. With its user-friendly interface and multiple map themes, it makes fieldwork more practical and efficient.

Mobile Technologies

- Flutter + Dart
- Mapbox GL JS
- 3D Tiles Wieving
- Offline Data Collecting
- IOS Styled Components
- Socket.io Client
- SQLite + Geopackage

Back-End Technologies

- NodeJS + Express
- PostgreSQL + PostGIS
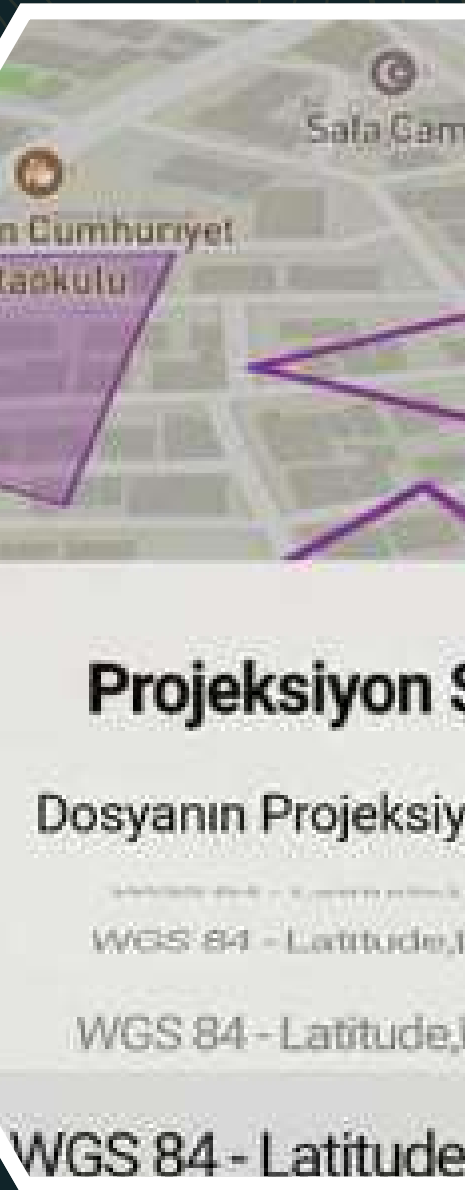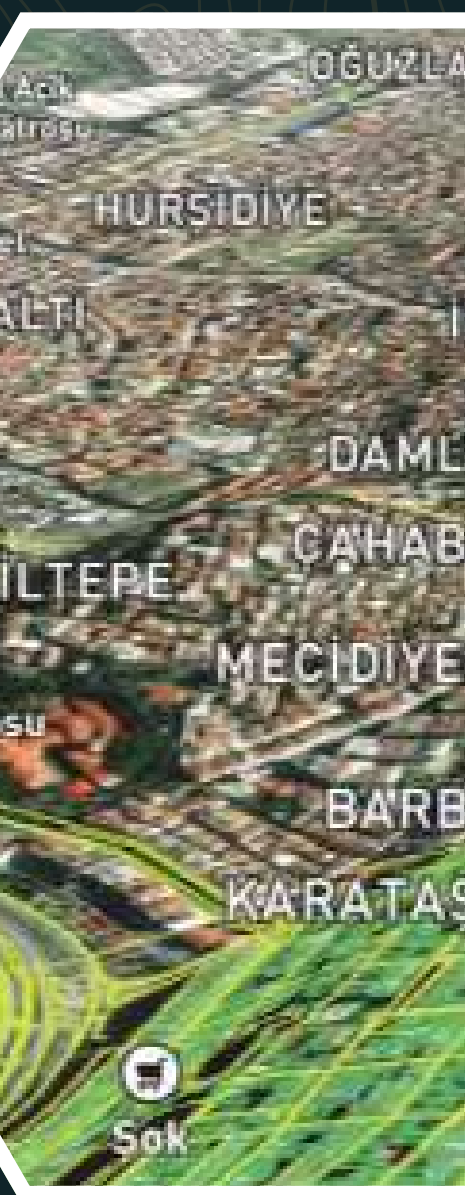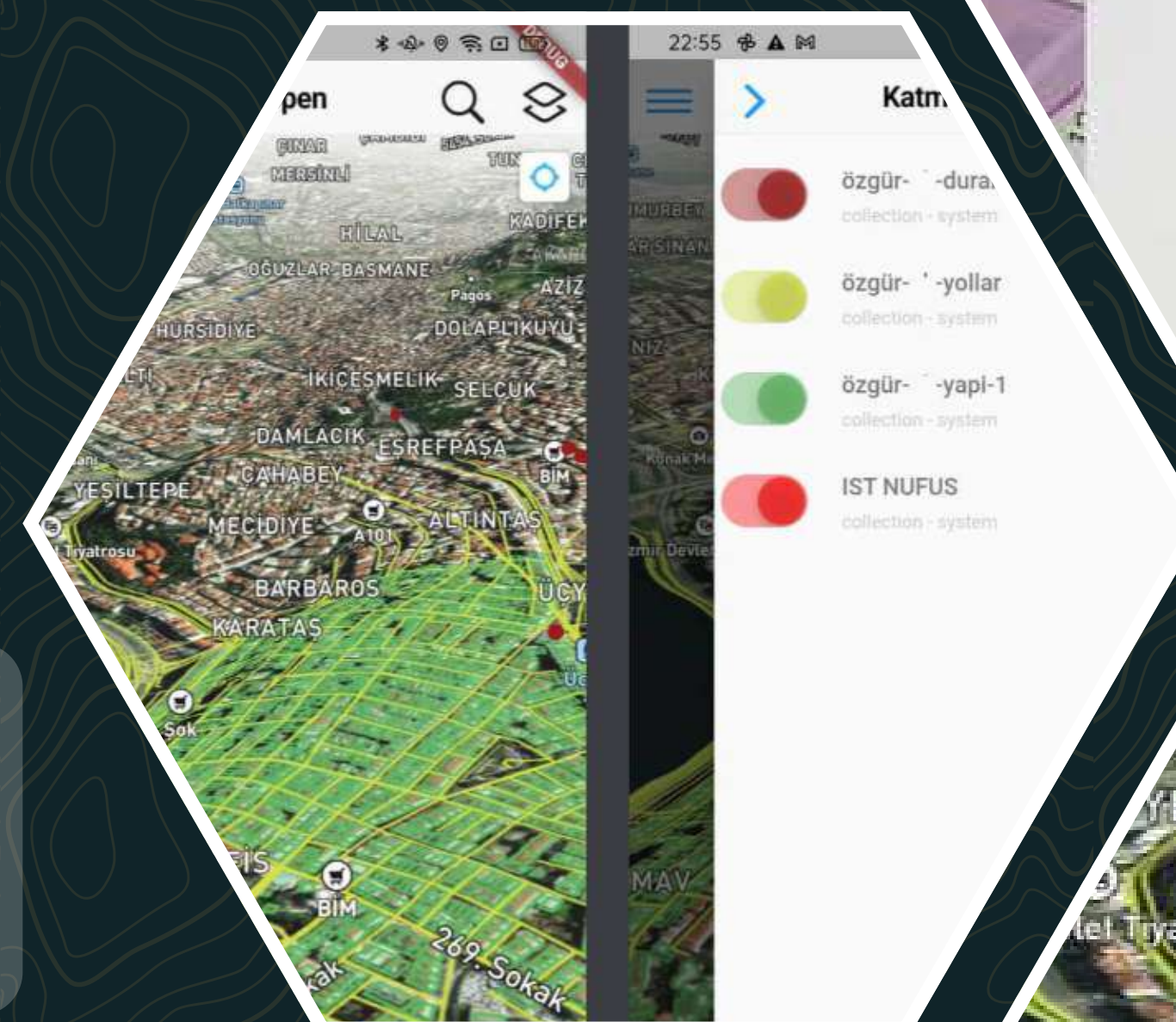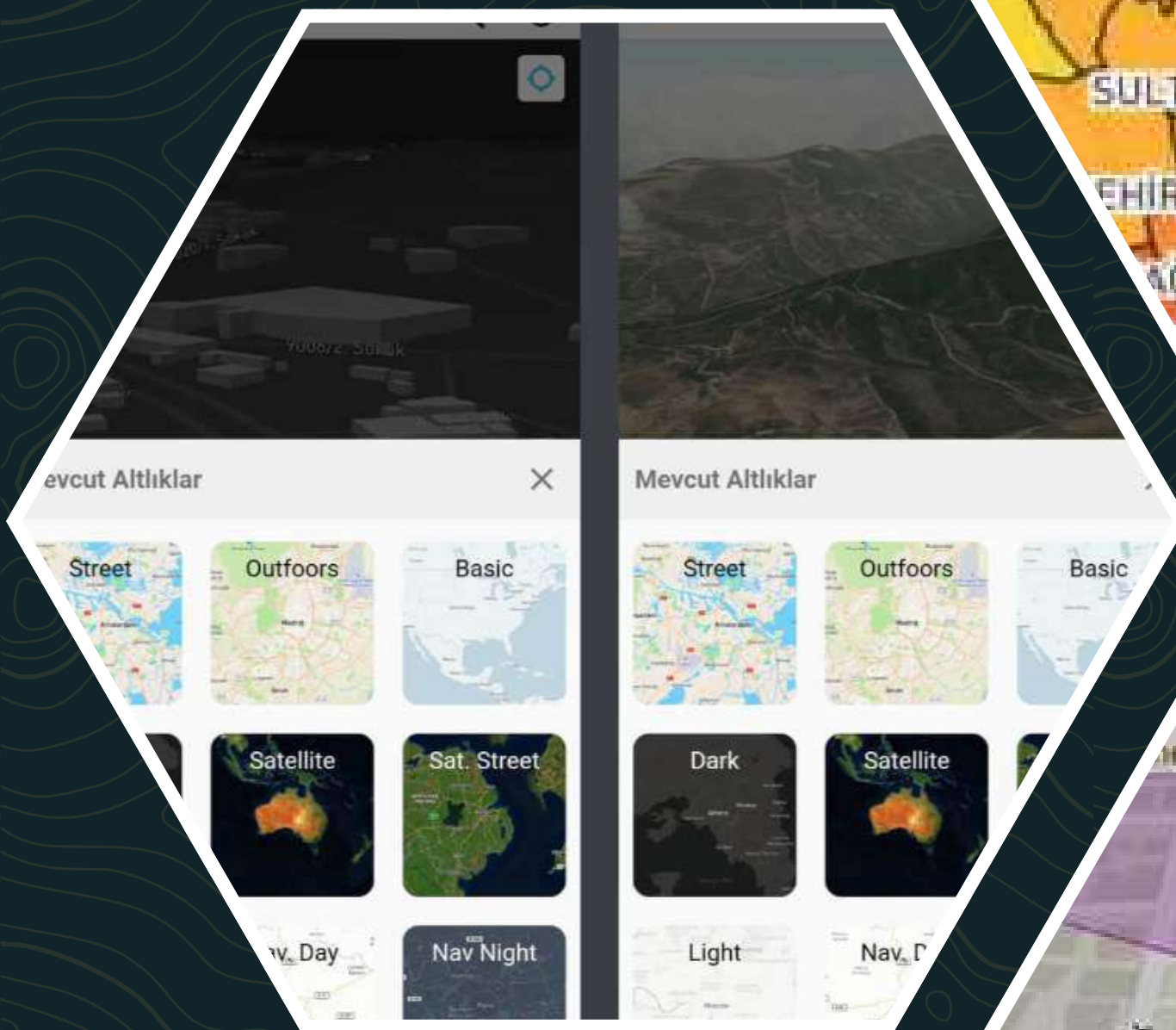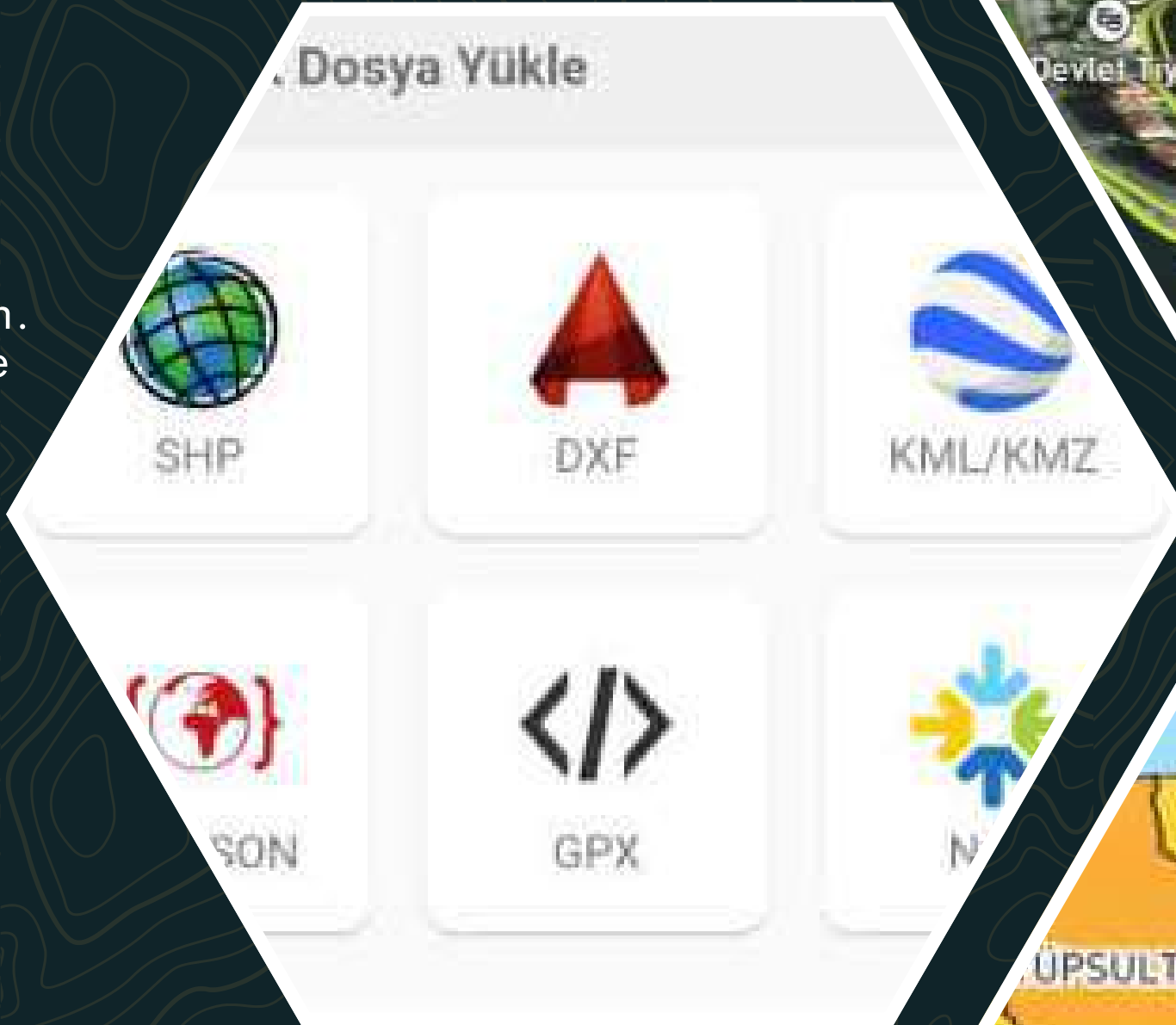- Socket.io Server
- Sequelize

GIS Skills

- Compass & Destination
- GPS Tracker
- Geometry Styling
- All EPSG Projections
- Geometry Drawing
- Geo Data Sharing
- Realt-Time Data Managing

Click and Check

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LAND DEGRADATION NEUTRALITY

As part of this project, I developed a web-based GIS platform covering the provinces of Tekirdağ, Edirne, and Kırklareli, where users can perform multi-layer analyses, utilize a dynamic legend, and conduct area-based assessments using both raster and vector data. The system serves as a decision support tool by providing comprehensive analyses of land use changes, soil organic carbon, productivity, erosion, and climate impacts, supporting sustainable agriculture and climate change adaptation.

VALUE	**AREA**	**PERCENTAC**
Other	0.20 km²	0.09
Pasture	5.40 km²	2.4
Forest	37.49 km²
Water	0.58 km²
Agriculture	129.06 km²

Front-End Technologies

- ReactJS
- Tailwind
- OpenLayers
- ChartJS

Back-End Technologies

- NodeJS + NestJS
- PostgreSQL + PostGIS
- Python, Rasterio, GDAL
- Raster XYZ Tile Caching

GIS Analysis

- DEM Data Visualization
- Slope Analysis Visualization
- Generating Hillshade Maps
- Thematic Map Styling
- Raster Data Classification
- Spatial Analysis on Vector Data
- Raster Calculations on GeoTIFF Files or Raster Analysis using TIFF
- Dynamic Chart Views
- Displaying False Color Satellite Imagery

Click and Check

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WEB GIS EDITOR SAAS PROJECT

GISLayer Web GIS Editor is a powerful and user-friendly geographic information system (GIS) tool that enables users to perform interactive map editing directly through their web browser. With this platform, users can create and edit vector data (points, lines, polygons), switch between layers, and export their data in formats such as GeoJSON, KML, and Shapefile. The system is compatible with map services like WMS and WMTS, offering various basemap options for detailed analysis and visualization. Its cloud-based architecture supports collaboration among teams, while compatibility with both mobile and desktop devices allows seamless integration between field and office workflows.

Front-End Technologies

- VueJS 2
- Openlayers
- MetroUI
- TurfJS + OpenCV + GeoTIFF
- Indexed DB (Offline Data Storage)

Back-End Technologies

- NodeJS + Express
- PostgreSQL + PostGIS
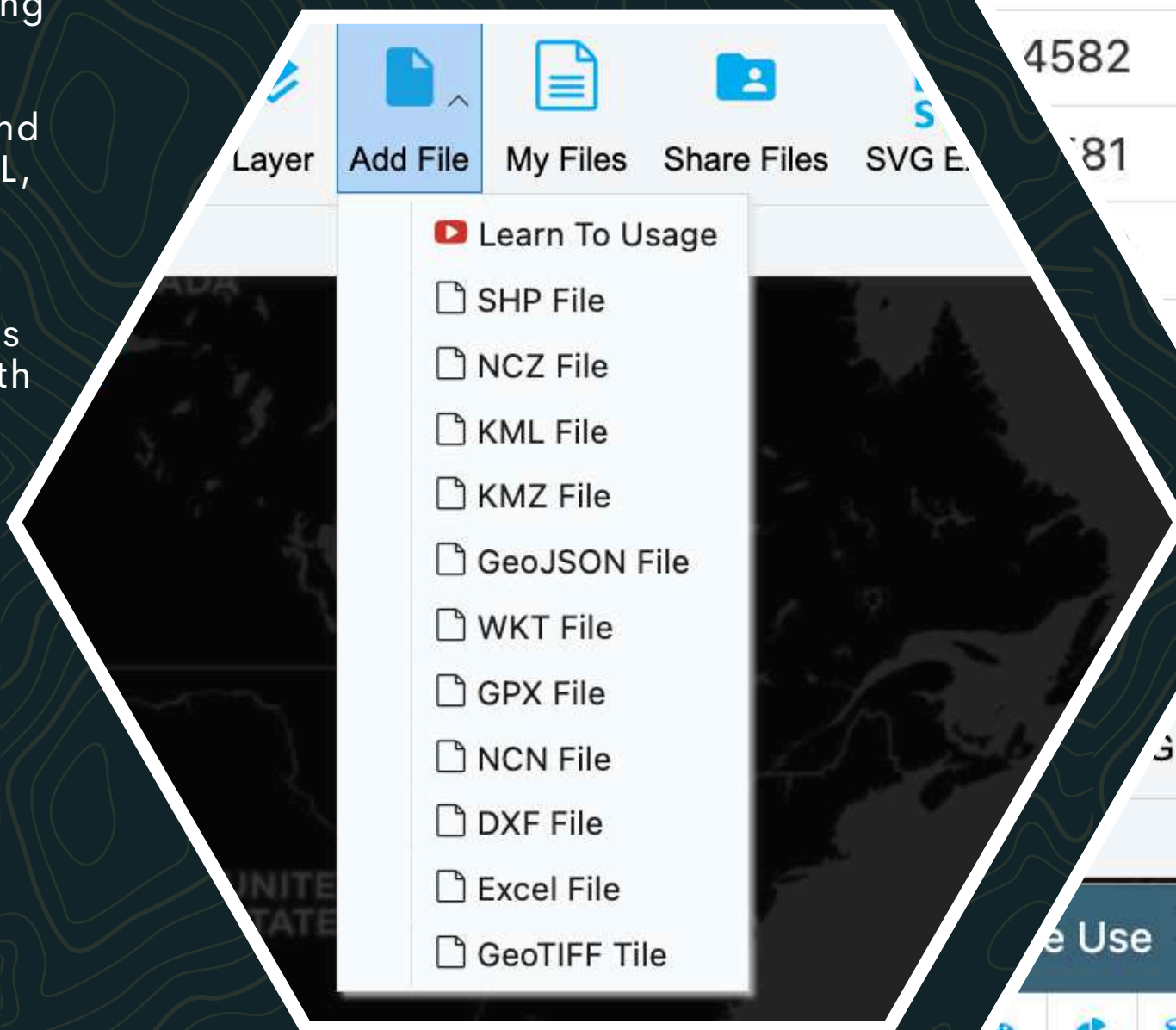- Socket.io Server
- Sequelize

GIS Skills

- Team Works
- Real-Time Data Editing
- Thematic and Density Map
- Cloud Based Data Storage
- Geometry Drawing
- Geo Data Sharing
- Realt-Time Data Managing
- Spatial Analysis Queries
- Spatial Data Import/Export
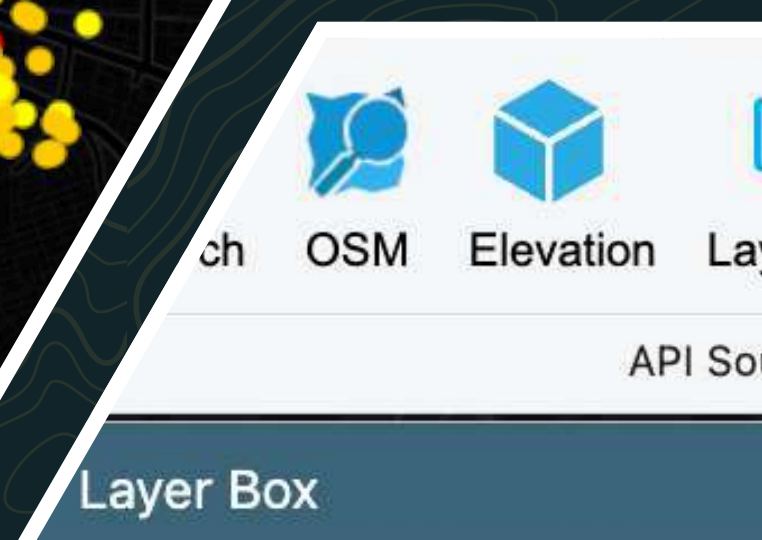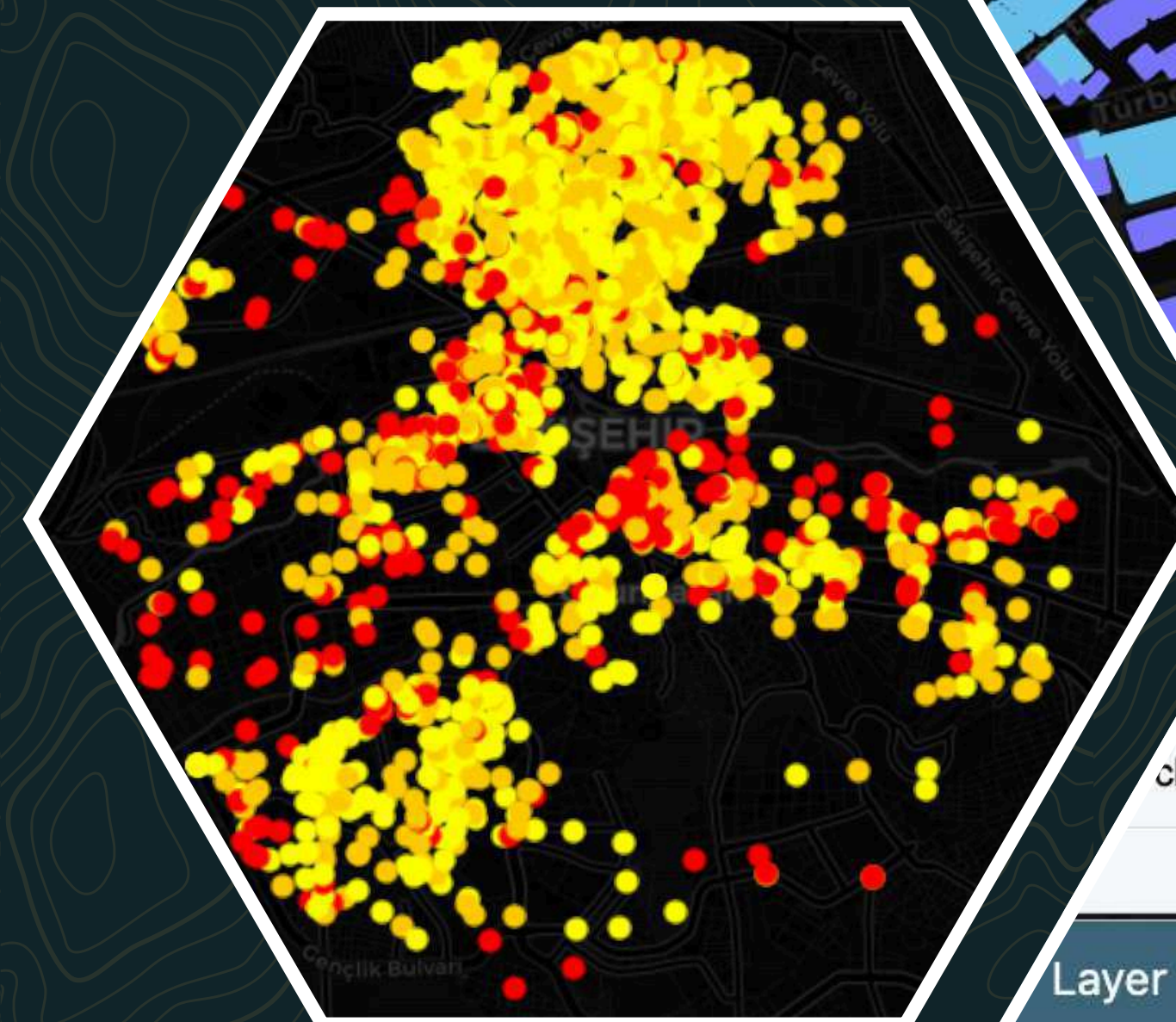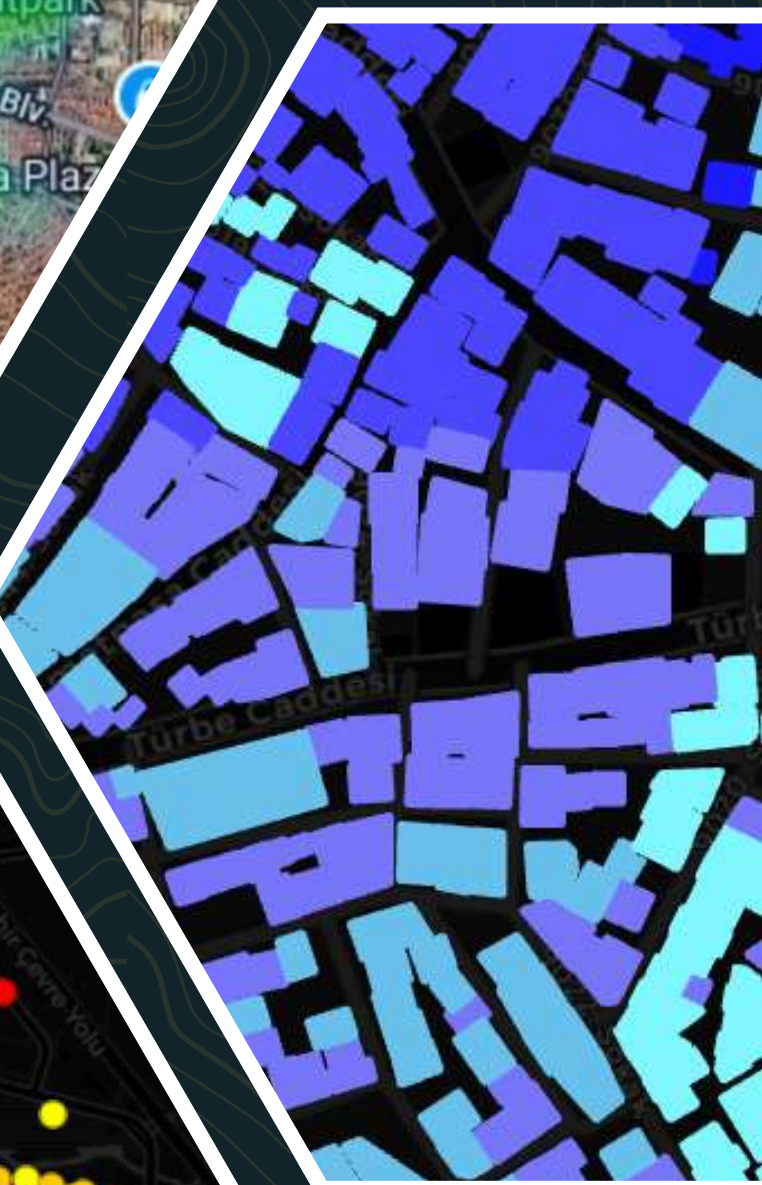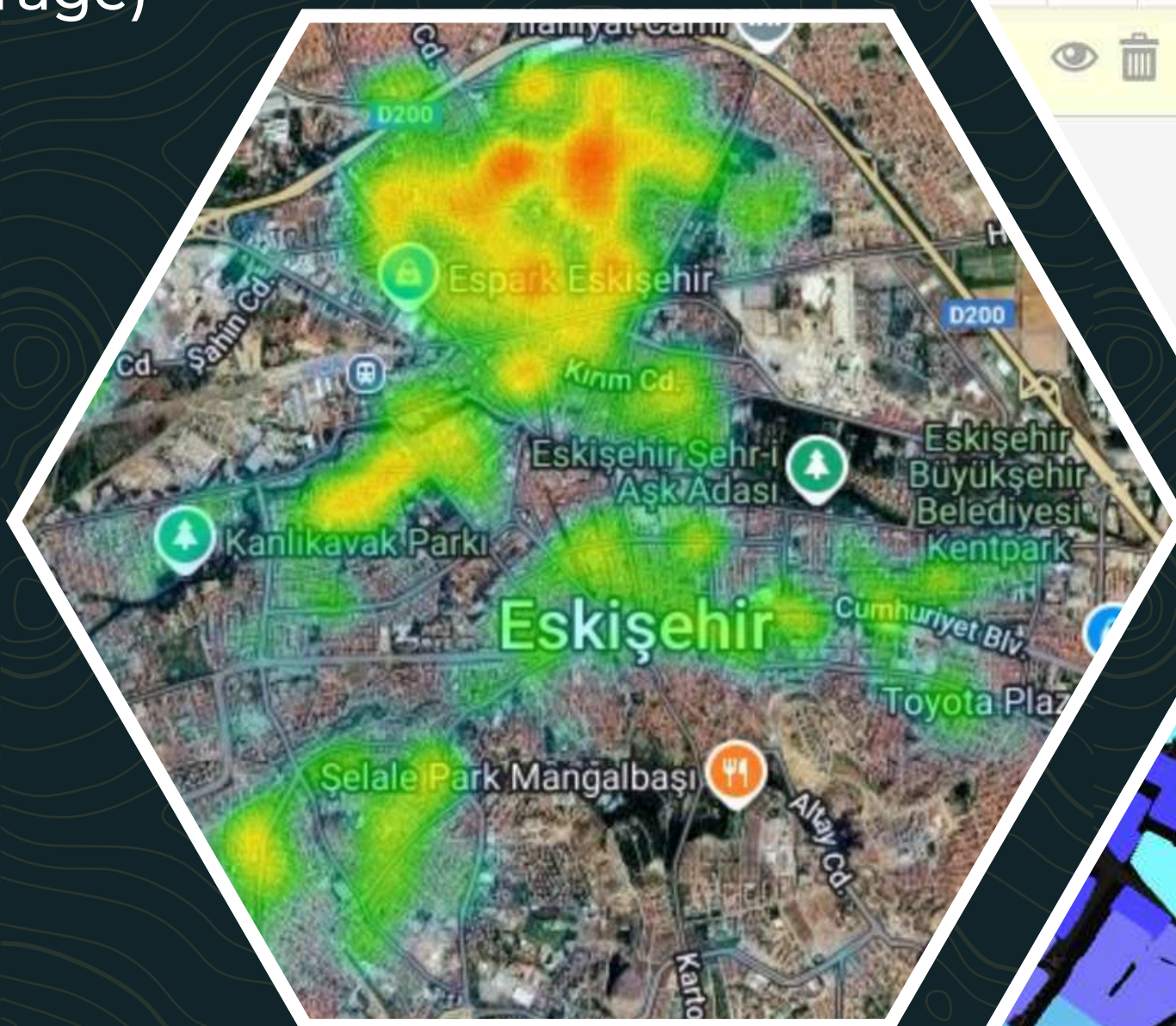- SVG and PDF Export

Click and Check

Contact Me
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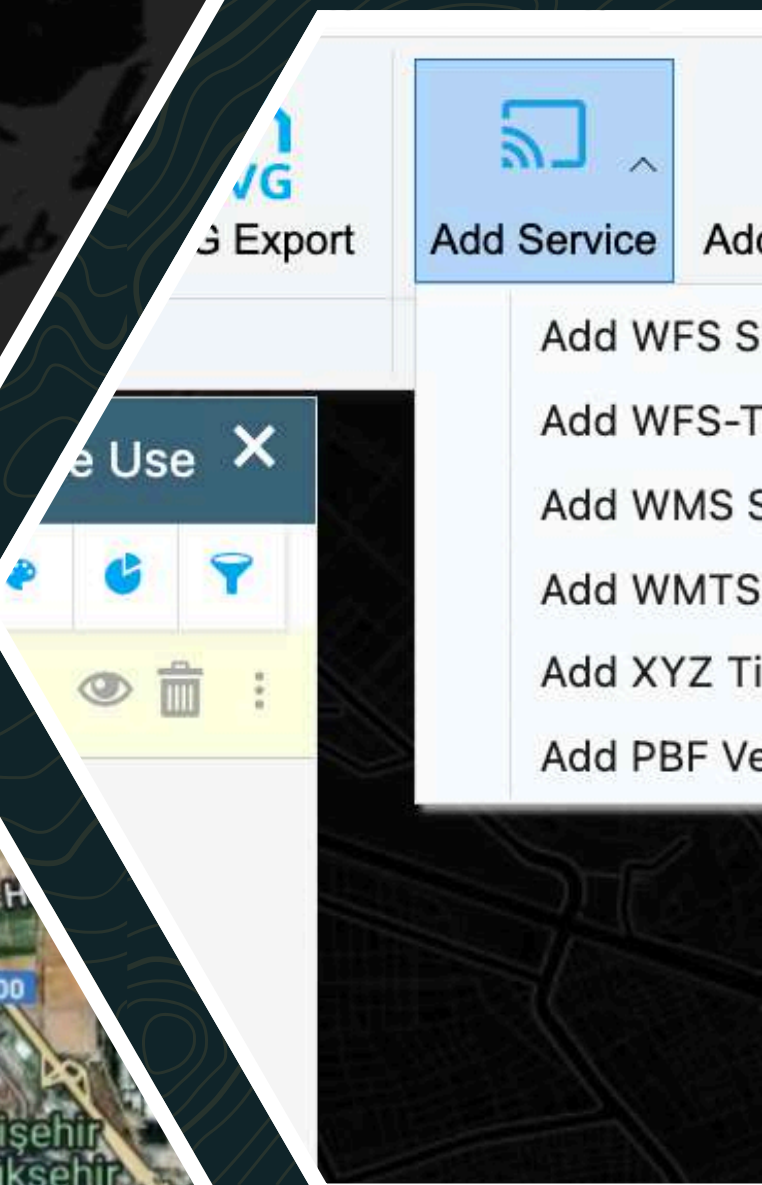
AGRICULTURE FIELD MANAGEMENT

This software has been developed to ensure the healthy cultivation of plants and trees in agricultural areas by enabling the disciplined and efficient management of field workers. Within the scope of agricultural operations, there are numerous elements that need to be recorded, including positive developments, external threats, periodic tasks, instant notifications, and other complex processes. The software tracks the real-time locations of workers and dynamically logs the activities they perform on the agricultural land they visit. Designed not for a single fixed use case but with flexibility in mind, the system is capable of adapting to a wide range of agricultural needs and workflows.

Front-End Technologies

- VueJS 2
- Openlayers + Mapbox GL JS
- Bulma CSS
- TurfJS + GeoTIFF
- Dynamic Chart Generating

Back-End Technologies

- NodeJS + Express + Sequelize
- PostgreSQL + PostGIS
- Socket.io Server

GIS Skills

- Dynamic Form Data Collection
- Vector Tile Server
- Thematic and Density Map
- Remote Sensing Analysis
- Field Notification Picker
- GPS and Mobile App Tracking
- Geospatial Operations
- Dynamic Work Flow
- Dynamic Storage Management
- React Native GIS Field APP
- Custom Detailed Navigation

Click and Check

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STREET SCANNER

This software has been developed for scenarios where every street in a city needs to be visited at least once for data collection. Its primary goal is to determine the most efficient route and systematically record the paths that have been traveled. Users can be registered in the system, specific routes can be assigned as tasks, and the progress of field teams can be monitored in real time. The software supports dynamic data collection and provides route optimization assistance using the Chinese Postman Problem algorithm. It serves as an effective tool for applications such as generating street view imagery and detecting illegal natural gas connections.

Front-End Technologies

- ReactJS + Redux
- Tailwind
- Mapbox GL JS
- ChartJS, Overpass API

Back-End Technologies

- NodeJS + NestJS
- PostgreSQL + PostGIS
- Raster XYZ Tile Caching
- Vector PBF Tile Caching

Mobile Technologies

- React Native
- SQLite Offline Data Usage
- Mapbox GL JS
- Real-time Geo Data View

GIS Skills

- Chinese Postman Algorithm
- GPS Location Tracking
- 360 Photo View on Map
- Custom Navigation
- Custom Geometry Styling
- Adding OGC Standards
- Dynmaic Data Forms

Permis...
Gorup : R...

Grants users the ability ...
that use : Super Admin, R...

WFS-T Service
- GeoServer

BSS | MSS | ITA | ESS | D...

on the Map

Field Stuff
3 Permissions

User has only view options

agement / Projects / Create Project
ect Roads | Project Layers | Project Users

asemaps

Streets | Outdoors | Light
Deselect | Deselect | Deselect

Layers
ara City WFS-T Service
ge 10-22 and visible

Olivia Smith
olivia.smith@crocsoft.com — Des...

Liam Johnson
liam.johnson@crocsoft.com — Select

Emma Brown
emma.brown@crocsoft.com — Select

Noah Garcia
noah.garcia@crocsoft.com — Des...

Martinez
artinez@crocsoft.com
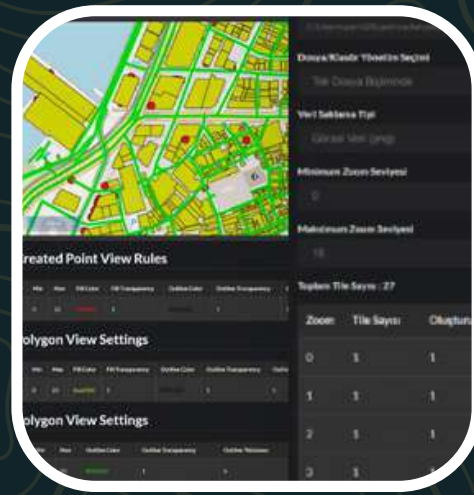
iams

Click and Check

WWW

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SOME PROJECTS & TOOLS

3D City Guide For Municipality
- Thematic 3D Analysis
- Address Finding
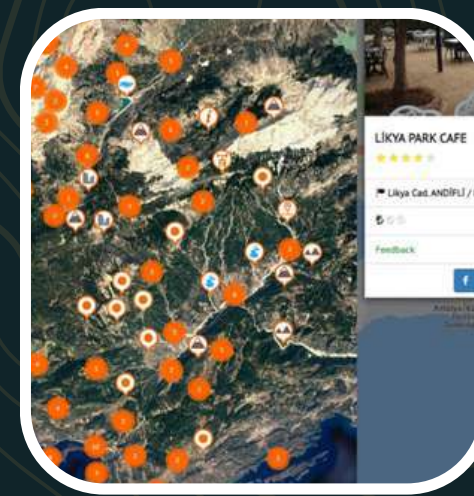- Polygon Fill Patterns
- POI Search Tool

Vector Tile Server
- Caching PBF Tiles
- Caching PNG Tiles
- Adding Open-source Geo Files

Earthquakes and Helper POI
- Earthquake Points
- Tweet Locations
- Helper POI Data
- Lost People News

Interaktif Map Tourist Guide
- Cheap Places
- Navigation to Place
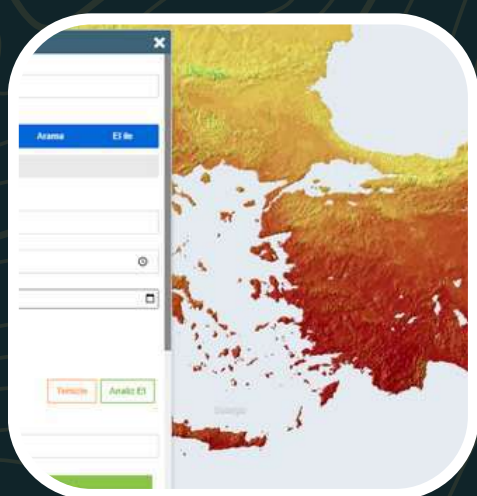- Showing Informations
- Geometric POI Search

Downloading Foursquare POI
- Dynamic Search Circle
- Dynamic POI Categories
- Getting SQL Export
- Excel and GeoJSON Export

Storing GeoJSON Data Withing IndexedDB
- GeoJSON Storage
- Editing Feature at IndexedDB
- Removing From IndexedDB

Solar Panel Position Planning
- Calculating Total KW Electric
- Sun Position Calculating
- Showing Solar Basemap
- Calculating Different Axis Panels

OSM Data Downloader
- Getting in a Area City Data
- Sun Position Calculating
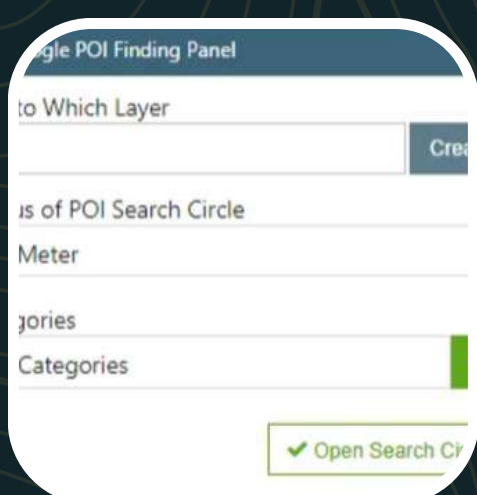- Showing Solar Basemap
- Calculating Different Axis Panels

Gitlab Commit Analyzer
- Listing groups, projects and Users
- Getting commits metrics
- Generating Line Chart by Commits
- Analysing work performance

Infrapedia Subsea, Terrestrial Cables Management
- Maping Subsea Cables
- Maping Terrestrial Cables
- Maping Data Centers and ORGs

Downloading Google POI
- Dynamic Search Circle
- Dynamic POI Categories
- Getting SQL Export
- Excel and GeoJSON Export

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GIT & NPM LIBRARIES

npm spatial-to-svg

npm map-tiles-generator

npm map-tiles-downloader

vector-tile-server

opencv-and-openlayers

network-analysis

indexeddb-geojson

cql_filter_editor

mapSectionLayout

npm mapbox-gl-snap

Get-Foursquare-POI-Data

Online-Raster-Calculator

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