

Kanva

Technical Overview

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Kanva: Better predictions for better decisions

Kanva is an innovative software solution that enables domain experts to create state-of-the-art AI **prediction models** based on historical data. Any business scenario where predictions can make a difference is a potential use case, but common ones include predicting customer churn, forecasting service consumption, and predictive maintenance.

No coding or AI skills required

Domain expertise is all that is needed to create powerful regression, classification and forecasting models in **Kanva**, making advanced predictive analytics accessible to professionals across various fields.

Full ownership

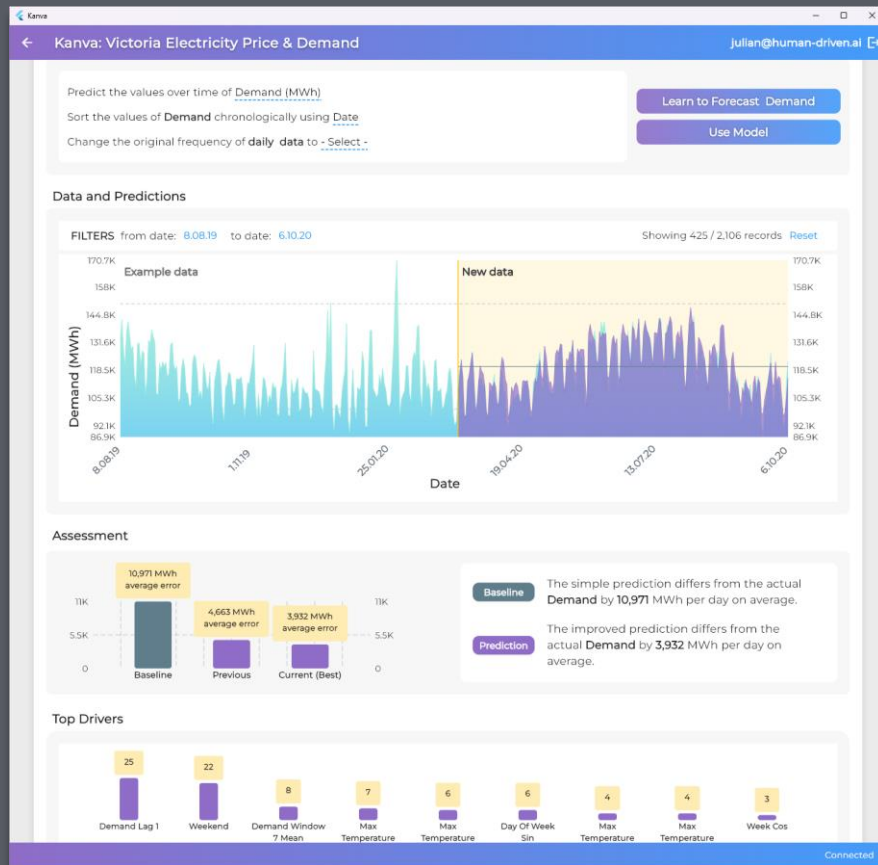
Predictive models in **Kanva** are created from scratch, do not use any external resources or APIs, and are **fully owned** by the customer. This ensures data privacy and gives users complete control over AI assets.

Runs on your infrastructure

Kanva can be installed in any Azure subscription from the Marketplace or an ARM template. Manual and custom installations are also supported.



Kanva: AI-powered forecasts



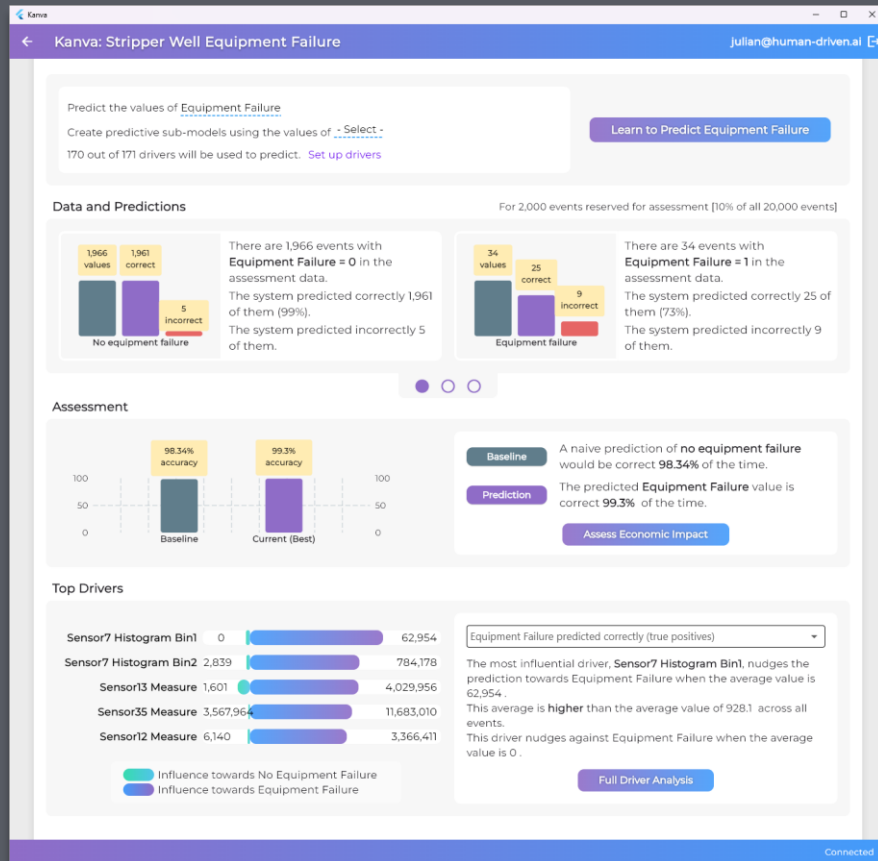
Blue area: actual demand
Purple area: forecast generated by Kanva.

Kanva enables domain experts to create **AI-powered forecasting models** based on historical data in minutes or seconds, for any quantity that changes over time due to known causes.

In this example, Kanva learned to forecast 1-day ahead electricity demand in Victoria, Australia. It generated a baseline (simple mean) for comparison and translated the results to an understandable statement. Just from patterns in the data itself, it can forecast the demand with an average error of 4,663 MWh; improving over the simple baseline by 6,308 MWh.

The domain expert can **add drivers** to improve the forecast. In this case, by including the maximum daily temperature, the average error has gone down further from 4,663 to 3,932 MWh.

Kanva: AI-powered predictions



Kanva enables domain experts to create **AI-powered regression and classification models** based on historical data in minutes or seconds.

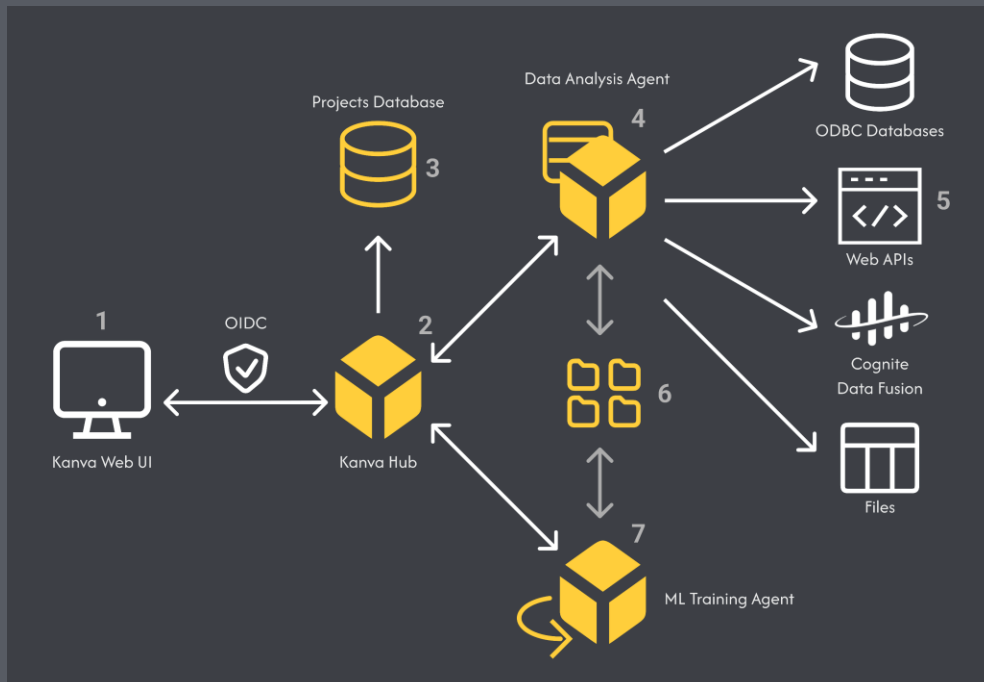
In this example, **Kanva** learned to predict failures on surface equipment and down-hole equipment at a stripper well, with real data provided by ConocoPhillips' West Texas Conventional operation. The dataset contains 20,000 records for 107 sensors and 170 data points (columns).

Out of 34 equipment failures in 2,000 entries with new data, not used to create the predictive model, **Kanva** correctly predicts 34 failures (9 failures were missed). This is before any tuning in the form of adding or removing measures that can improve results.

Deployment Overview

- Kanva is deployed in the customer's infrastructure, to avoid issues with data privacy, ownership and security.
- Kanva runs entirely locally in the infrastructure where it is deployed:
 - No external services are used
 - No pre-trained models are used
 - No data leaves the platform

Reference Architecture Overview

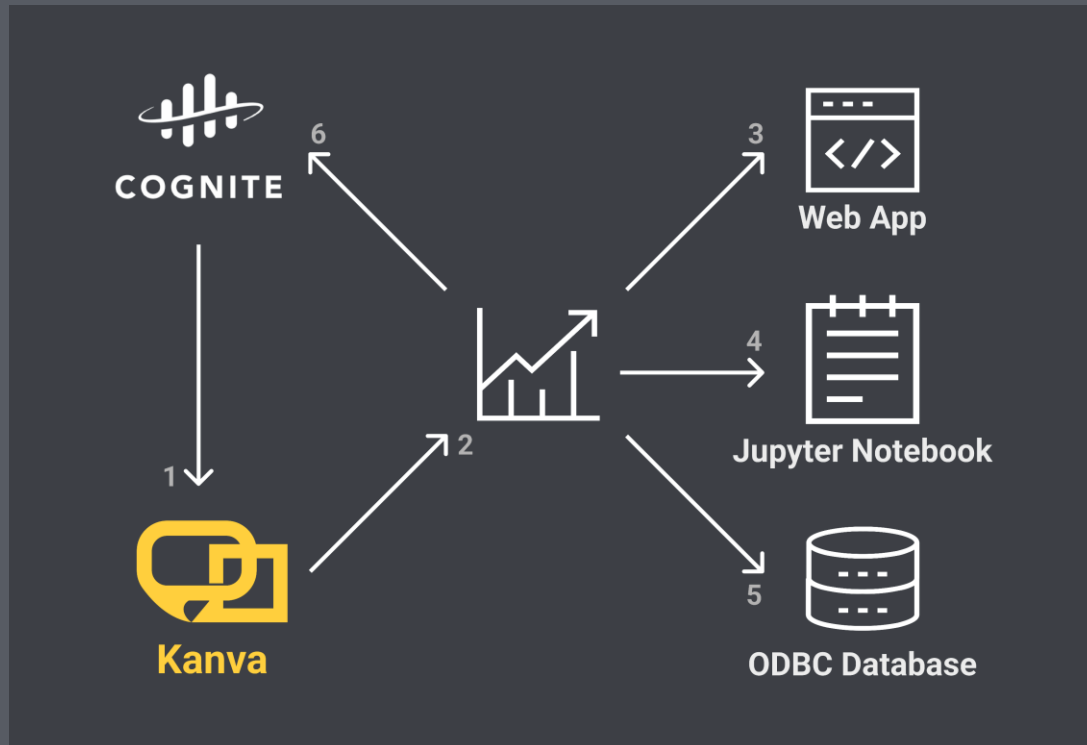


 Container Apps – Images come from Human-Driven AI's container registry

1. Users access Kanva through a web UI and optionally authenticate via OpenID Connect.
2. The Kanva Hub coordinates work between clients and special agents that analyze data and train machine learning models.
3. The definition for projects and datasets are stored in a small Azure SQL database.
4. A Data Agent can read data from different sources and run analysis and statistical tests.
5. The data agent reads and analyzes customer data from ODBC databases, Files, APIs and Cognite Data Fusion.
6. A copy of the data is cached in a private blob storage, processed for machine learning.
7. An ML Training Agent trains machine learning models, using the data pre-processed by the Data Agent.

Cognite Data Fusion support

Kanva supports loading time series data directly from **Cognite Data Fusion** using the Cognite API.



1. Once a CDF data source has been created in Kanva, asset time series can be imported into Kanva as a regular dataset.
2. A time series forecasting model is created in Kanva.
3. The model can be exported as a Web App to produce predictions on-demand.
4. The model can be exported as a Jupyter Notebook for further exploration.
5. The model can generate batch predictions and insert them into a database at scheduled intervals.
6. Prediction data can be sent back to CDF.

Deployment Options

- [Deploy from Azure Marketplace](#)
- [Manual Deploy on Azure](#)
- [Custom Deployment \(Other Cloud Providers, On-premises\)](#)

Deploy from Azure Marketplace

Kanva is available in the Azure Portal and the Azure Marketplace:

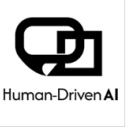
- [Azure Marketplace](#)
- [Azure Portal](#)

For programmatic deployments, please refer to the official documentation

- [Azure Application from Azure Marketplace](#)
- Publisher ID: human-driven-ai
- Product ID: kanva-pilot
- Plan ID: kanva-pilot



Products > Kanva (Free Trial)



Kanva (Free Trial)

Human-Driven AI

[Overview](#) [Plans + Pricing](#) [Ratings + reviews](#)

No-code, AutoML platform that allows domain experts to create AI-driven predictive models.

This offer allows you to deploy a fully functional version of Kanva in your Microsoft Azure environment, free of charge except for Azure resource consumption, for trial purposes.

[Get It Now](#)

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Price varies

Categories
AI - Machine Learning
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Compute



Support
Support

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Key Benefits

Kanva: Empower Your Business with Predictive AI

Kanva is an innovative AutoML solution targeted at domain and subject matter experts who don't necessarily possess coding or data science skills. It combines the most powerful machine learning models for tabular data with the most user-friendly interface available in the market. With Kanva, your domain experts can create models to predict customer churn, forecast sales, predict risk of incidents, implement predictive maintenance schemes, and address a plethora of other use cases.

Kanva (Free Trial)

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This offer allows you to deploy a fully functional version of Kanva in your Microsoft Azure environment, free of charge except for Azure resource consumption, for trial purposes.

Kanva: Empower Your Business with Predictive AI

Kanva is an innovative AutoML solution targeted at domain and subject matter experts who don't necessarily possess coding or data science skills. It combines the most powerful machine learning models for tabular data with the most user-friendly interface available in the market. With Kanva, your domain experts can create models to predict customer churn, forecast sales, predict risk of incidents, implement predictive maintenance schemes, and address a plethora of other use cases.

Manual Deploy on Azure

Human-Driven AI provides a PowerShell application to deploy Kanva to an Azure subscription, using the configuration depicted in the [Reference Architecture Overview](#). It allows to create a whole deployment, or to create only missing resources. For example, you can skip the creation of the project database and use your own.

Requirements

1. Password for HDAI's container registry. Contact us to receive it.
2. Azure CLI.
3. PowerShell.

Steps

1. Clone <https://github.com/Human-Driven-AI/kanva-pilot/>
2. Follow the instructions in the Readme file.

Kanva Setup

```
1. Configure
2. Create Resource Group [✓]
3. Create Storage Account [✓]
4. Create Projects Database [✓]
5. Create Container App Environment [✓]
6. Create Container Apps [✓]
7. Create App Registration (For Authentication)
8. Maintenance
9. Utils
E. Exit
```

```
=====
Enter your choice: |
```

Azure Requirements (Minimum)

Resource Type	Quantity	Description	Minimum Resource Requirements
Containers	3	1 st container: Kanva Hub 2 nd container: Data Analysis Agent 3 rd container: Training Agent Performance can be scaled with up to 3 containers for each type of agent with the basic	1 CPU x 3 2Gi x 3
Serverless SQL database	1	Used to store Kanva projects (not training data). Can be any MSSQL or PostgreSQL database. Possibility to add adapters for other RDBMS.	Standard-series (Gen5) 0.5 vCore 5GB
Blob container	1	Use to store cached version of the training data to speed up analysis and training, plus training artifacts like models and weights.	

Estimated Azure Costs

Resource		For updated pricing
Container App	kr0,0002648 per vCPU/second kr0,0000331 per GiB/second (memory) Kr4,413 per million requests	https://azure.microsoft.com/en-us/pricing/details/container-apps/
File Share	kr0,7281 per used GiB	https://azure.microsoft.com/en-us/pricing/details/storage/files/
SQL Database	kr5,046 per vCore-hour kr3,662 per GB/month	https://azure.microsoft.com/en-us/pricing/details/azure-sql-database/single/
Monthly Azure cost for minimum deployment: kr2 126 (compute) + kr1 821 (storage) + variable consumption ~kr4 000-5 000 per month		

Custom Deployment

Human-Driven AI will assist the customer to deploy Kanva on their own on-premises, hybrid or cloud infrastructure, or to deploy Kanva with a customized architecture. This is done in at least two sessions:

1. Planning session with HDAI
2. Deployment session assisted by HDAI

Product Capability Matrix (Functional)

Capability	Production Grade	Beta 1 month	Development 3 months	Research 6 months (*)
Forecasting	◆			
Binary Classification	◆			
Multiple Classification		◆		
Regression	◆			
Model Interpretability (SHAP)		◆		
Panel Forecasts			◆	
Hierarchical Forecasts			◆	
Dimensionality Reduction				◆
Clustering				◆

Product Capability Matrix (Technical)

Capability	Production Grade	Beta 1 month	Development 3 months	Research 6 months (*)
Tree-based models	◆			
Horizontal Scaling	◆			
Multi-Platform client (Win, Mac, Linux, Web)	◆			
Model Serving (Inference) via API			◆	
Batch Model Training			◆	
Cognite Data Fusion Support		◆		
Export Models as Jupyter Notebooks		◆		
Scheduled Data Loading			◆	
Scheduled Model Training			◆	