# Introduction to Plotly Dash

Plotly's Community Manager and author, Adam Schroeder

# What will we
# Learn Today

– AI App Examples

– Plotly Graphing Library

– Data Viz Best Practices

– What's a Dash App?

– Dash App Structure – minimal example

– Dash Enterprise & Resource List



Dash Lyft Perception

| Camera Position | Image Overlay | Frame | Progression | Lidar Position |
|---|---|---|---|---|
| Front | Pointcloud / Boxes | Prev / Next | | Top |

**plotly** | **Dash**
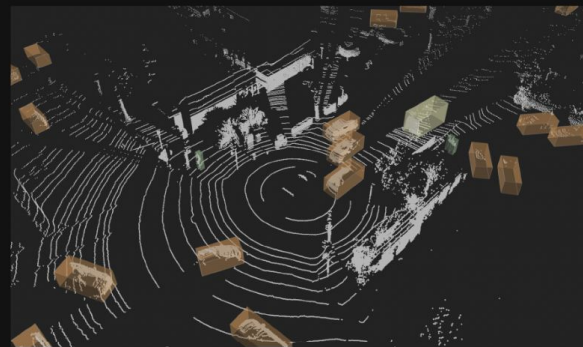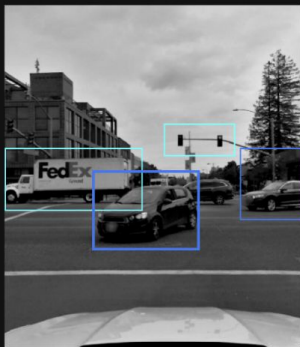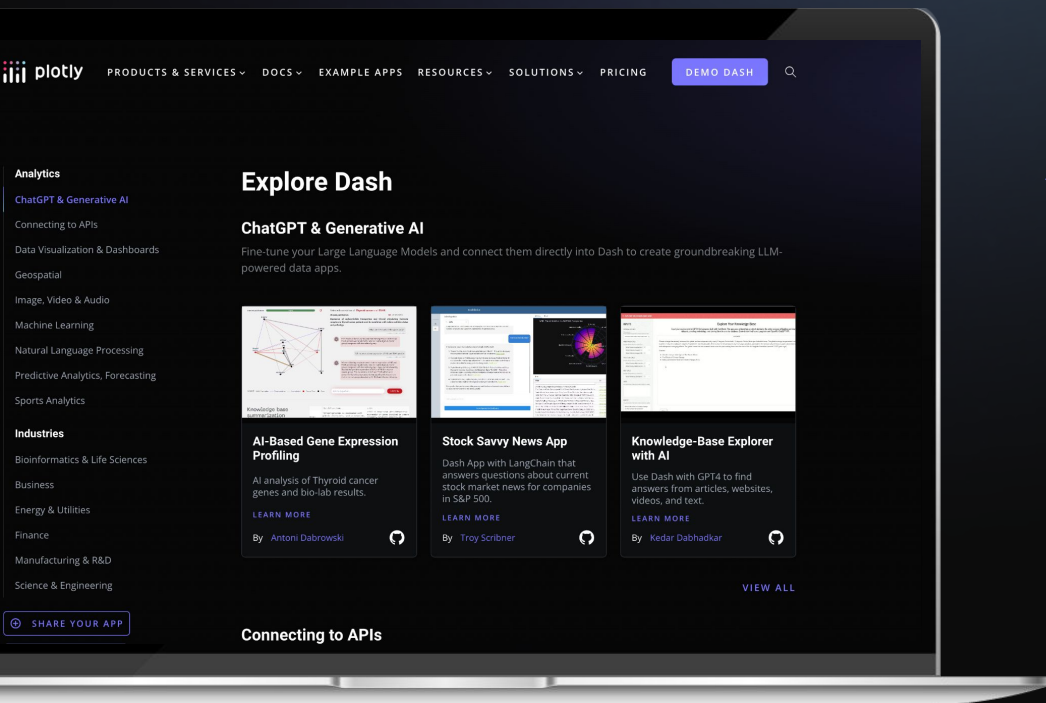
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AI App Examples

– Plotly Example Apps

– Object detection

– Quiz Dash App

– Michelin Guide App

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PRODUCTS & SERVICES ⌄  DOCS ⌄  EXAMPLE APPS  RESOURCES ⌄  SOLUTIONS ⌄  PRICING  DEMO DASH

Analytics

ChatGPT & Generative AI
Connecting to APIs
Data Visualization & Dashboards
Geospatial
Image, Video & Audio
Machine Learning
Natural Language Processing
Predictive Analytics, Forecasting
Sports Analytics

Industries

Bioinformatics & Life Sciences
Business
Energy & Utilities
Finance
Manufacturing & R&D
Science & Engineering

⊕ SHARE YOUR APP

Explore Dash

ChatGPT & Generative AI

Fine-tune your Large Language Models and connect them directly into Dash to create groundbreaking LLM-powered data apps.

AI-Based Gene Expression Profiling

AI analysis of Thyroid cancer genes and bio-lab results.

LEARN MORE

By  Antoni Dabrowski

Stock Savvy News App

Dash App with LangChain that answers questions about current stock market news for companies in S&P 500.

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By  Troy Scribner

Knowledge-Base Explorer with AI

Use Dash with GPT4 to find answers from articles, websites, videos, and text.

LEARN MORE

By  Kedar Dabhadkar

VIEW ALL

Connecting to APIs

# Plotly at a Glance

Founded in
## 2013
Harvard, Stanford, McGill Alum

## 500+ Million
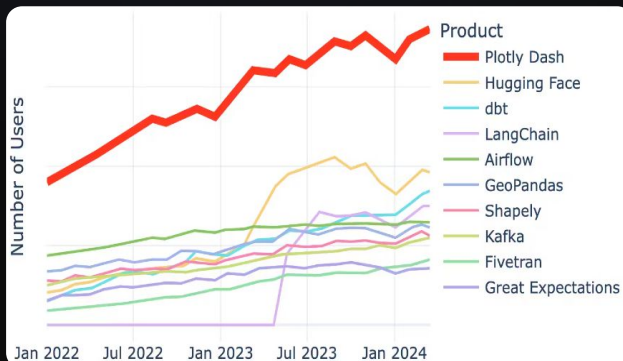yearly downloads of Plotly open source

## 12 in top 1%
12 open source projects in top 1% of PyPI downloads

## 115,000+
GitHub Stars

## #1 Data + AI Product

Per the State of Data + AI 2024 survey of 10,000+ Databricks customers



Product
- Plotly Dash
- Hugging Face
- dbt
- LangChain
- Airflow
- GeoPandas
- Shapely
- Kafka
- Fivetran
- Great Expectations

## 100s of Customers
50+ in the Fortune 500 and Global 2000

S&P Global — NREL — uni per

INTUIT — martin engineering — KOMATSU

CIBC — JM Johnson Matthey — NHS

Industry Use Cases:
- Risk Management in Finance
- Bioinformatics in Life Sciences
- Predictive Maintenance in Energy
- Supply Chain Visibility in Retail
- Manufacturing Quality Monitoring

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# Plotly Graphing Library

– Plotly Graphing Docs

- Plotly Express API Reference

- Figure Reference

**Click to open:**
https://wasmdash.vercel.app/
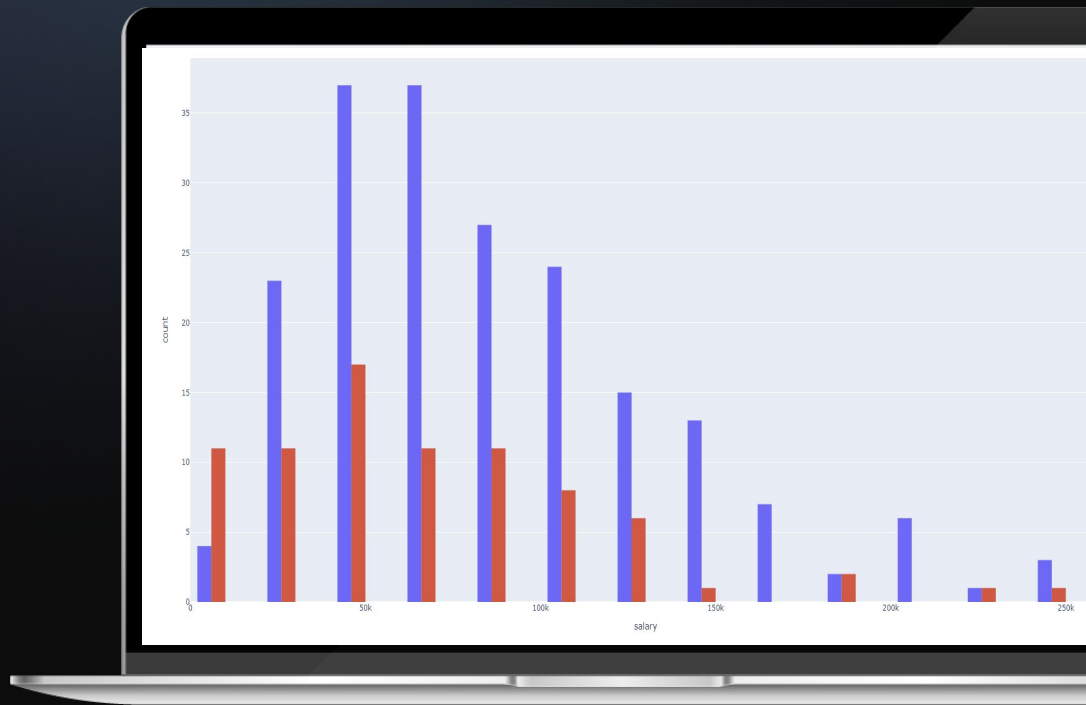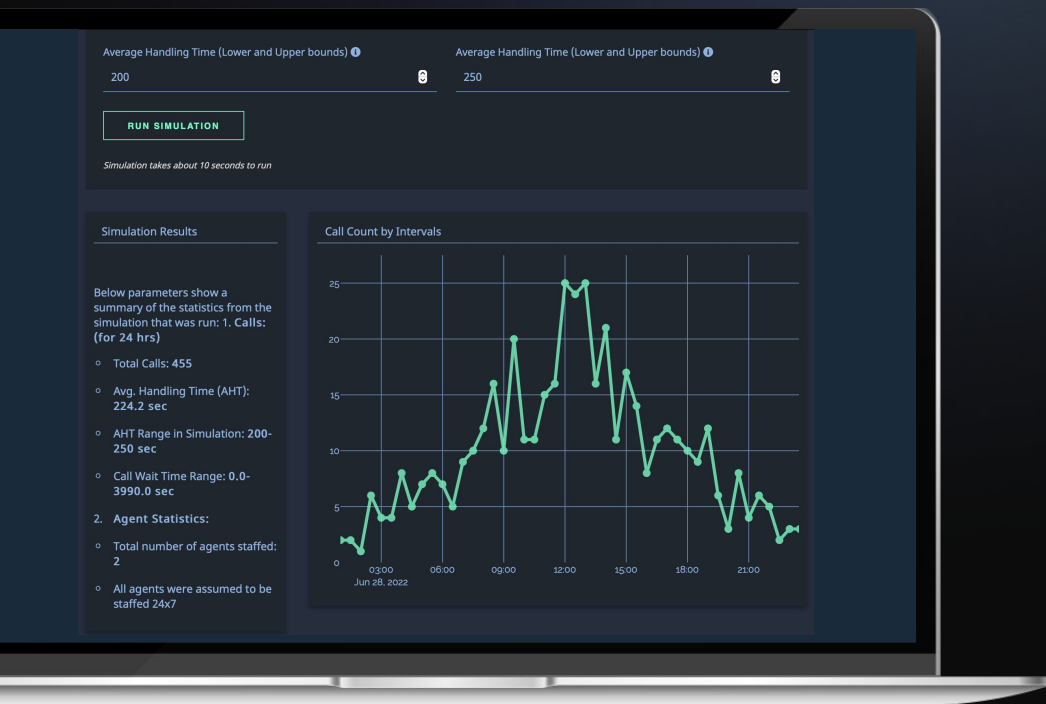
# Data Viz Best Practices

## Shaffer's Four C's:

Clear

Clean

Concise

Captivating

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# What's a **Dash App**?

Dash Apps are accessible to end-users and enable consumption of data & analytics

Dash Apps run custom computations and models on-the-fly

Dash Apps enable customization in the UI that is onerous or impossible to achieve in point-and-click tools

Dash Apps can be built in days by a single data scientist instead of months by a traditional full-stack IT team

# Dash App **Structure**

– Python libraries

– Read data into the app

– App Layout with Dash components

– Callback

– Run app

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# Minimal Dash App Example

```python
from dash import Dash, dcc, callback, Output, Input
import dash_bootstrap_components as dbc

app = Dash()
app.layout = [
    dcc.Markdown(children='', id='myoutput'),
    dcc.Input(value='Type Text', id='mytext')
]

@callback(
    Output('myoutput', component_property='children'),
    Input('mytext', component_property='value')
)
def update_graph(el_texto):
    return el_texto


if __name__ == '__main__':
    app.run(debug=True)
```
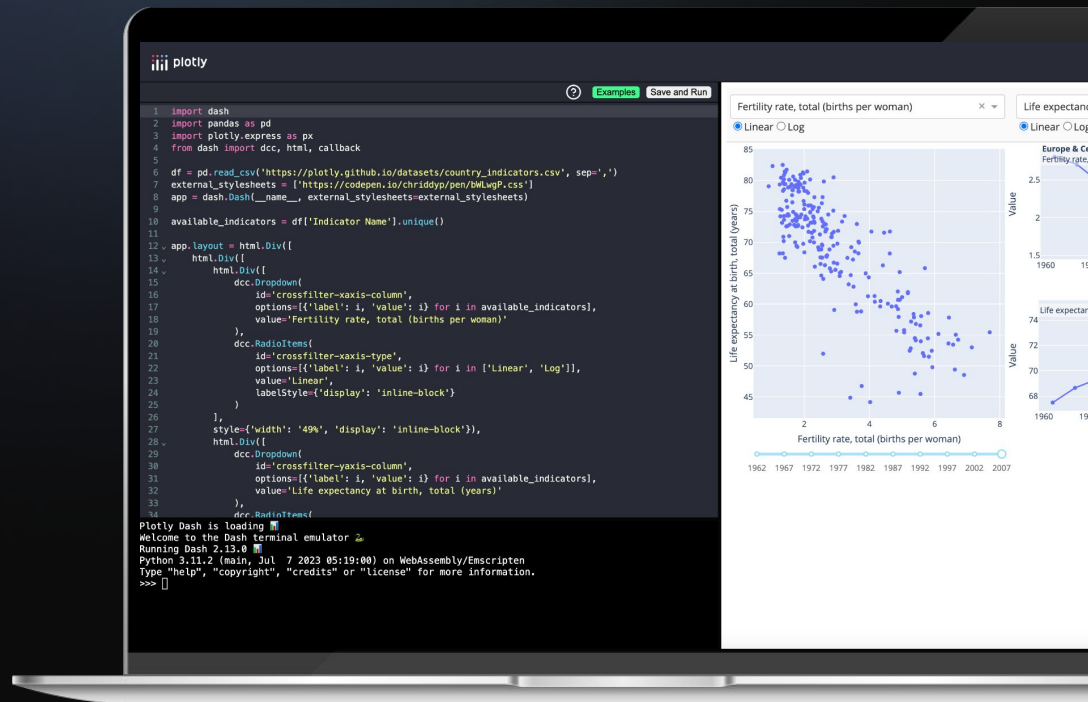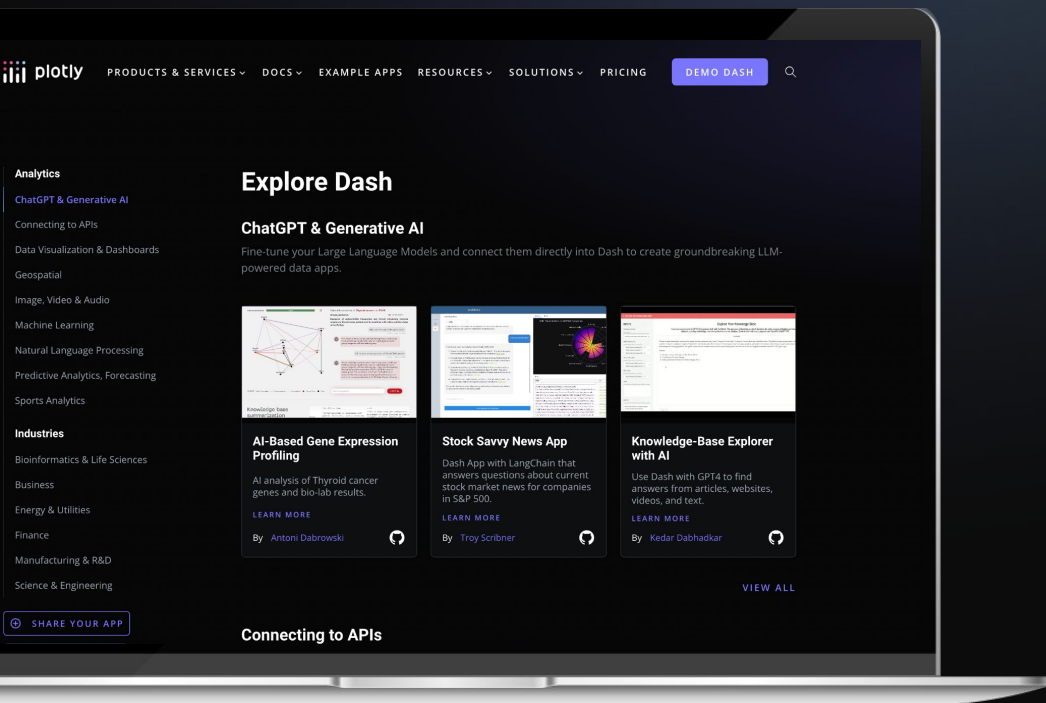
# Dash App with
# Graph and Data

WasmDash --

https://wasmdash.vercel.app/

Dash in 20 example

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# Dash Enterprise and Resource List

– Built-in, configurable authentication

– Industry-standard data encryption

– Data source Integration, linking Dash apps to major back-end data sources like Databricks, Snowflake and dothers

– List of Resources

# Questions?

Contact: adam@plot.ly

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