pixel
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TensorFlow

kubernetes

aws

DATA AND
ARTIFICIAL INTELLIGENCE

PORTFOLIO

2024

Building Digital Futures
with Trust and Innovation.

Revolutionizing Your Data Journey with AI, Cloud, and Advanced Analytics.

Transform your business with cutting-edge Data & AI solutions that drive innovation, efficiency, and growth. We specialize in leveraging the power of data, artificial intelligence, and advanced analytics to help you make smarter decisions and achieve your strategic goals.

Portfolio Link:
https://epixelsolution.com/portfolio

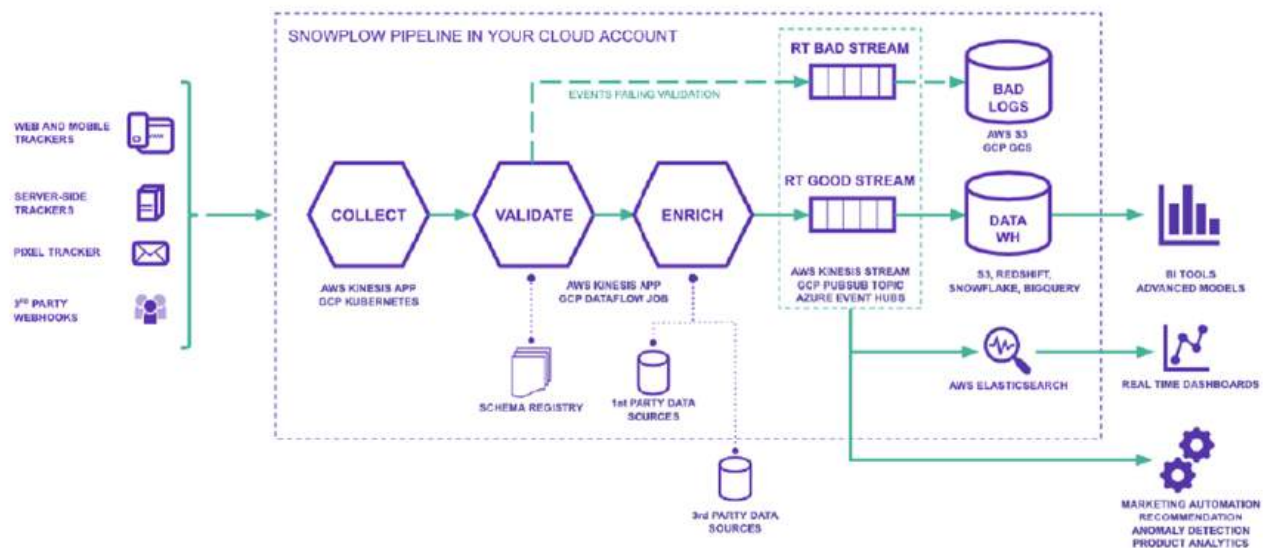**Contact Us:**
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01

Transforming Client Data into Business Success with Compliance-Ready Analytics using Open Source Snowplow

Client Success through Advanced Data Engineering

At EPixel, we've successfully implemented the Open Source Snowplow pipeline for our clients, transforming their data management processes while ensuring compliance with GDPR and US regulations.

TECHNOLOGIES USED:
AWS Kinesis, GCP Kubernetes, AWS S3, Redshift, and advanced

We customized and deployed the Snowplow pipeline, focusing on compliant data practices, real-time processing, and actionable analytics.

HOW WE DELIVERED

Enhanced Data Compliance: Our implementation ensured that all data handling processes were in full compliance with GDPR and US data protection standards, safeguarding against legal risks.

Streamlined Operations: The new system streamlined data workflows, significantly reducing processing times and improving data accuracy.

Actionable Business Insights: With the data now effectively collected, processed, and stored, the client could leverage our real-time dashboards and analytics to gain deep insights, fostering informed decision-making.
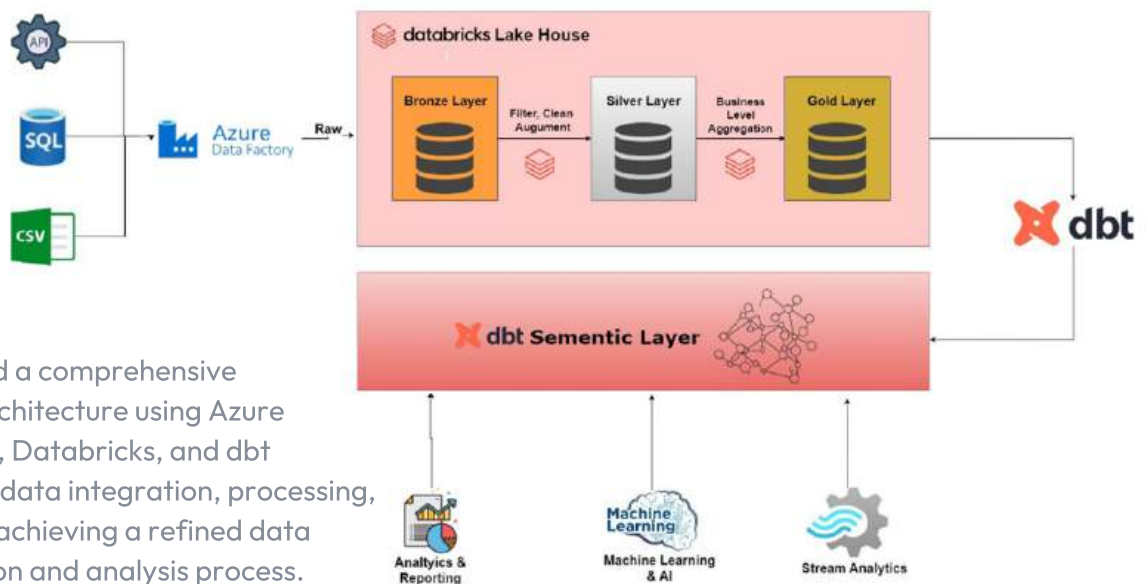
Streamlining Data Operations with EPixel's Data Lakehouse Architecture

Innovative Data Solutions Transforming Client Operations

EPixel has successfully revolutionized a client's data operations by implementing a state-of-the-art Lakehouse architecture, enhancing data flow from collection to insights, and ensuring seamless compliance with data governance standards.

TECHNOLOGIES USED:

Azure Data Factory, Databricks layers (Bronze, Silver, Gold), dbt for semantic layer management, and integration with advanced analytics and machine learning platforms.

We developed a comprehensive Lakehouse architecture using Azure Data Factory, Databricks, and dbt to streamline data integration, processing, and storage, achieving a refined data transformation and analysis process.

KEY OUTCOMES FOR OUR CLIENT

Integrated Data Workflow: Our solution standardized the data ingestion from various sources including APIs, SQL databases, and CSV files, through Azure Data Factory into Databricks, where data was meticulously processed through Bronze, Silver, and Gold layers for enhanced clarity and structure.

Enhanced Analytical Capabilities: By implementing the dbt semantic layer, we provided a robust framework for consistent data modeling and reporting, which significantly enhanced the client's analytics and machine learning initiatives.

Real-Time Insights and Reporting: The architecture empowered the client to leverage real-time analytics and machine learning to drive predictive insights and actionable intelligence, directly impacting strategic decisions.
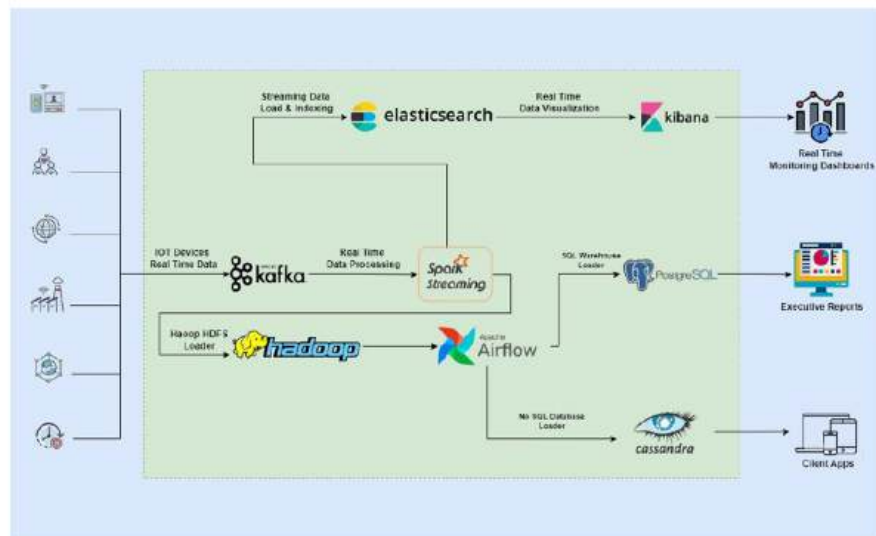
03

Optimizing IoT Data Streams with EPixel's Advanced Analytics Pipeline

Enabling Real-Time Decision Making for IoT Applications

EPixel has successfully deployed a sophisticated IoT data pipeline for a client, harnessing the power of real-time data processing to drive operational efficiencies and enhanced data-driven decisions.

TECHNOLOGIES USED:
Apache Kafka, Spark Streaming, Hadoop HDFS, Apache Airflow, Elasticsearch, Kibana, PostgreSQL, and Cassandra.

EPixel developed a comprehensive IoT data pipeline integrating Kafka, Spark Streaming, Hadoop, Elasticsearch, and Kibana to facilitate efficient data flow, storage, and real-time analysis.

KEY OUTCOMES FOR OUR CLIENT

Efficient Data Ingestion and Management: Leveraging Kafka, we enabled seamless data ingestion from numerous IoT devices, ensuring data integrity and timeliness.

Advanced Data Processing: With Spark Streaming, we implemented real-time data processing capabilities, allowing for immediate insights and responses to data inputs.

Enhanced Data Storage and Retrieval: Utilizing Hadoop for data storage and Elasticsearch for indexing and search capabilities, the solution provided robust and scalable storage solutions tailored to high-velocity IoT data.

Real-Time Visualization and Monitoring: Through Kibana, we delivered powerful real-time monitoring dashboards, enabling the client to visualize operational metrics instantaneously and make informed decisions.

Integrated Data Handling: Data was also systematically loaded into PostgreSQL for structured querying and into Cassandra for handling unstructured data, ensuring comprehensive data availability for varied analysis needs.
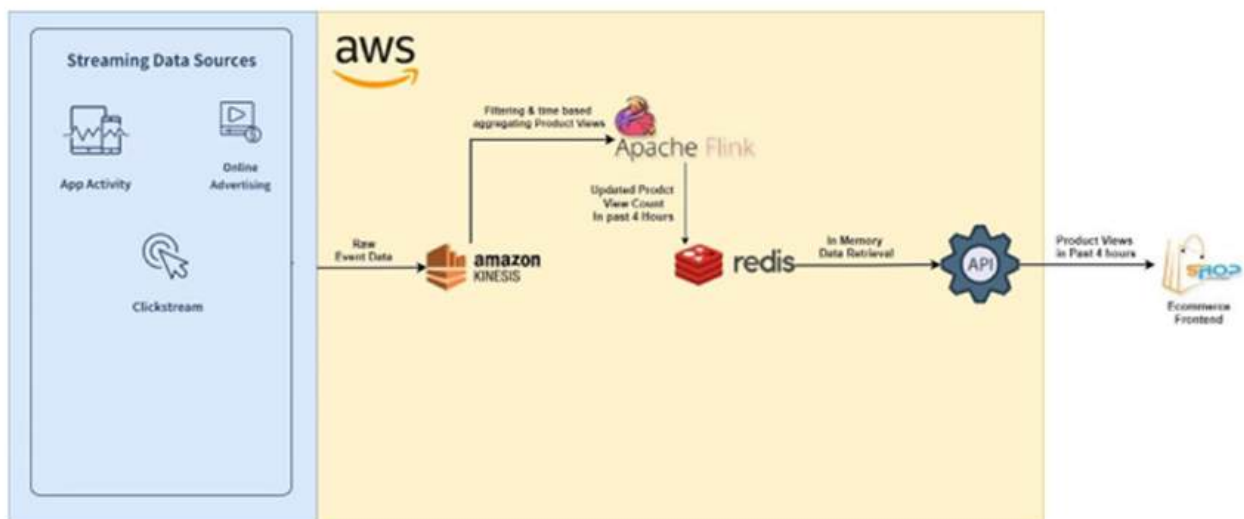
Enhancing E-commerce Analytics with Real-Time Data Processing at EPixel

Advanced Streaming Solutions for Immediate Business Impact

EPixel has expertly crafted and deployed a real-time data pipeline for a leading e-commerce client, dramatically improving their ability to monitor product interest and adjust marketing strategies dynamically.

TECHNOLOGIES USED:
Amazon Kinesis, Apache Flink for real-time data processing, Redis for fast data retrieval, and custom APIs for seamless frontend integration.

We developed a sophisticated pipeline using Amazon Kinesis, Apache Flink, Redis, and a custom API to aggregate, process, and deliver product view data in real-time to the e-commerce frontend.

KEY OUTCOMES FOR OUR CLIENT

Real-Time Data Aggregation and Processing: Utilizing Apache Flink, we implemented time-based aggregation of product views, enabling the client to see updated counts every four hours, providing fresh insights into customer engagement.

Fast Data Access and Integration: By leveraging Redis, we ensured that the processed data could be accessed swiftly through an API, facilitating immediate updates on the e-commerce platform.

Enhanced Customer Insights: The real-time visibility into product views allowed the client to make informed decisions quickly, adjusting marketing and stock strategies to better meet customer demands.
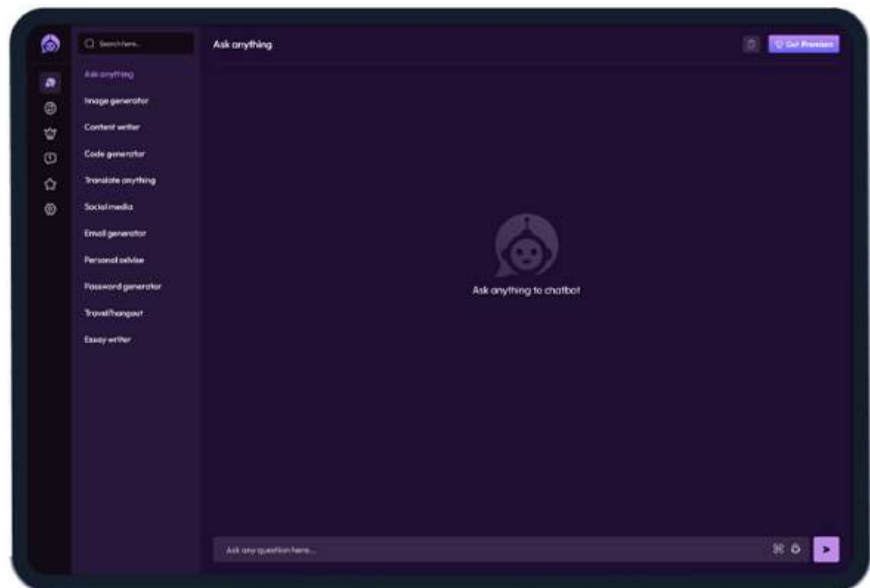
05

Enhancing Internal Operations with AI-Powered Chatbot

Leveraging AI to Automate Data Extraction, Translation, and Query Response

EPixel has successfully developed a chatbot for a company's internal operations, enhancing efficiency by automating data extraction from PDFs, translation, and query response using AI technologies.

TECHNOLOGIES USED:

- Azure Cognitive Services OCR
- Azure Translator
- OpenAI GPT models
- Azure Bot Service

We utilized Azure Cognitive Services' OCR to extract text from PDF data, followed by translation from Arabic to English using Azure Translator. The processed data was then used to fine-tune GPT models with OpenAI. The chatbot, deployed using Azure Bot Service, responds to user queries and generates pertinent data.

KEY OUTCOMES FOR OUR CLIENT

Prompt and Precise Responses: The chatbot delivers accurate responses to internal queries, facilitating smoother operations and decision-making.

Enhanced Operational Efficiency: By automating data extraction, translation, and query response, the solution reduces manual effort and operational costs.

Actionable Insights from Unstructured Data: The chatbot effectively utilizes unstructured data to provide actionable insights, optimizing internal processes.
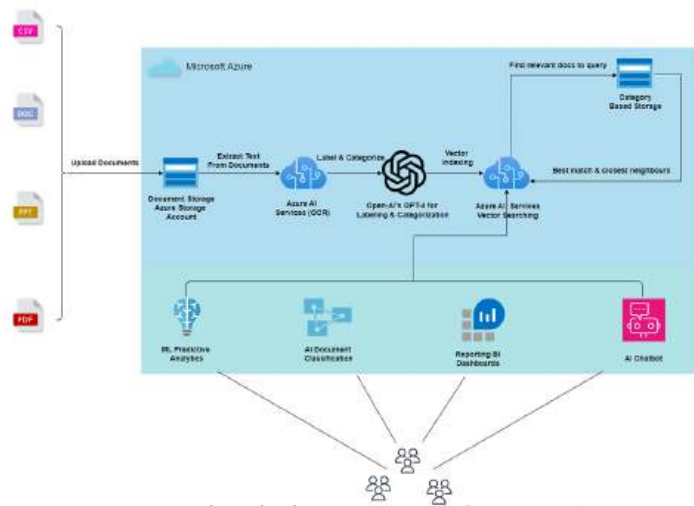
06

Next-Gen Intranet Solution with AI-Driven Document Management

We proposed and designed an Intranet Portal leveraging Microsoft SharePoint Server 2019. The solution was integrated with advanced AI and data analytics tools to address the client's requirements for workflow automation and process optimization. This system automates document management by extracting text, labeling, categorizing, and indexing documents for efficient search and retrieval. Additionally, it provides predictive analytics, intelligent search capabilities, and chatbot interactions for seamless data processing and user support.

TOOLS/TECHNOLOGIES USED

Microsoft SharePoint Server 2019,
Microsoft Azure,
OpenAI, Power BI, AI & ML,

Integration Services: For AI chatbot interactions using Microsoft Bot Framework and NLP

KEY HIGHLIGHTS

Document Storage and Text Extraction: Documents are uploaded to an Azure Storage Account, where Azure AI Services perform OCR to extract text.

Labeling and Categorization: OpenAI's GPT-4 processes the extracted text, labeling and categorizing the documents.

AI-Powered Search: Utilized Azure Cognitive Search for enhanced document indexing and full-text search, including OCR for scanned documents and semantic search to understand user intent.

Vector Indexing and Searching: Categorized data is indexed using Azure AI Services' vector search capabilities to find relevant documents and nearest neighbors efficiently.

Predictive Analytics: Leveraged Azure Machine Learning to analyze historical workflow data, predict bottlenecks, and integrate with Power BI for visual insights.

Automated Document Classification: Integrated Azure Form Recognizer and Text Analytics API to classify and tag documents using AI algorithms and NLP for contextual understanding.

NLP Chatbots: Implemented Microsoft Bot Framework and Azure LUIS to develop chatbots for user queries, document search, and support, integrated within the SharePoint portal.

Enhanced User Accessibility: Provides various user interfaces, including ML predictive analytics, AI document classification, reporting BI dashboards, and an AI chatbot for seamless interaction and data retrieval.

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THANK YOU

FOR YOUR BUSINESS.

At E-Pixel Solutions, we blend cutting-edge technology with creativity to deliver innovative digital solutions. Our team of expert developers, designers, and strategists is committed to turning your vision into reality, ensuring that every project we undertake is executed with excellence.

Founded with a vision to provide top-notch technology solutions, we've grown into a trusted name in the industry, delivering over 500 successful projects across the globe. Since our inception, we have been dedicated to helping businesses across various industries achieve their digital transformation goals.

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