

Capabilities


Driving Digital Outcomes Through Our IoT Capabilities


About Us

Overview

 **4000+**
Employees

 **10**
Global Offices

 **9**
Development
Centers

 **1,00,000+** Sq.ft.
Office Space

Great
Place
To
Work.
Certified
INDIA


25+
YEARS OF
EXCELLENCE


 **CMMI DEV/5**

Clientele


 **1500+**
Clients


 **50+**
Countries

 **85%**
Clients Retention

 **22+**
Industry Verticals

Achievements

 **2000+**
Products Engineered

 **1500+**
Applications
Developed

 **12+**
Awards

< / > 20+
Million Development
Hours

Partners



Microsoft

 **Google Cloud**

 **Magento**

Certified To Deliver Quality



ISO

9001:2015
Quality Management

ISO

27001:2013
Information Security

ISO

20000-1:2011
IT Management

ISO

22301:2012
Business Continuity
Management

What We Do

Team Augmentation

A team of 4000+ Battle Tested engineers across 100+ Different Stacks.

We are your Digital Factory, dedicated teams to supercharge your development throughput.

0 Operational Overheads.

Agile & On Demand.

Fixed Scope

We offer meticulously crafted project specifications and timelines for cutting-edge development, seamless integrations and feature-rich solutions.

The Sthenos Technologies approach ensures your projects are delivered with precision and excellence.

Managed Services

Our IMS services helps enterprises to run Business as usual.

With strong SLA driven services, 24x7 Support, Governance and Technology expertise, we help to optimize processes and costs.

Our Expertise

We help businesses wherever they are in their digital journey. From consulting for a **digital transformation** to carving out a **technology roadmap**. Our expertise helps you to **drive ROI** from your digital initiatives.

Digital Transformation

UX/UI Consulting

Web & Mobility Solutions

Enterprise API Management

RPA

Legacy Modernization

Digital Product Engineering

Custom Software Engineering

QA Services

Maintenance

Managed Services

Infrastructure & IT Operations

Cloud Consulting

DevSecOps

Cloud Migration

Cloud Management

Data Management & Analytics

Data Engineering

Governance

B.I. & Analytics

Artificial Intelligence

M.L. Models

Model Generation

M.L. Ops

Data Science

Internet of Things

IoT Consulting

Software Defined Features

IoT Applications

Innovation Lab

MVP & POCs

Rapid Prototyping

Emerging Tech

Team Augmentation

Solution Architects

B.A.

Developers

Data Scientists

Our Capabilities



IoT Consulting &
Strategy



IoT Sensor Node
Development



IoT Gateway
Development



IoT Cloud & Data
Analytics



Software Defined
Features



IoT Application
Development



IoT Product
Sustenance



Edge Computing



Artificial Intelligence
& Machine Learning



Security &
Compliance

Our Engagement Cycle

Presales

Our Capabilities
Client Requirement
Question and Answer
Opportunity
Assessment.

1

IoT Strategy & Thought Leadership

Discuss your organization needs, IoT solutions and vision for the solution.

2

Architectural Design Sessions

Discuss your organization needs, IoT solutions and vision for the solution.

3

Implement a Scoped POC

Execute one of the functions of the vision to measure feasibility and value.

4

Extend POC to Production

Use the POC as a framework and extend your solution to Production.

5

Selected Clientele



The background features a series of thin, light blue lines that originate from the bottom center and curve upwards and outwards towards the right edge of the frame. The lines are closely spaced and create a sense of motion and depth against the solid black background.

Case Studies

Globally Renowned Chain Of Hypermarkets

IoT powered smart retail solution that leverages image processing technology through sensor-driven cameras.

Image Processing

Sensors

CX

Data Analytics

Outcomes

Technology Inclusion

- Excludes fiat currency as a payment choice, sensor cameras, customer tracking, product recognition, real-time inventory tracking, and automation across critical functions.

10X Boosted CX

- Hassle-free check-ins and check-outs, convenience in shopping, zero queue-time, and digital payments led to a delightful shopping experience.

70% Boosted Sales

- Automated operations, demand/inventory forecasting, data analytics, and elevated shopping experience boosted sales across all the outlets.

Solutioning

Challenges

- Scarcity of skilled workforce to guide customers; retaining and training workforce was an additional overhead.
- Shoppers required to carry heavy baskets and wait in queue while billing and check-out.
- Managing fraud and shrinkage.

Technical Spotlight

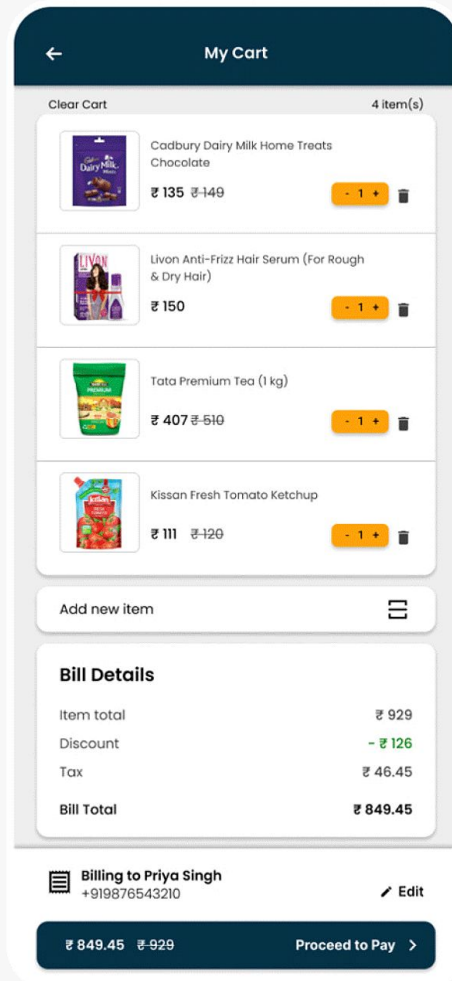
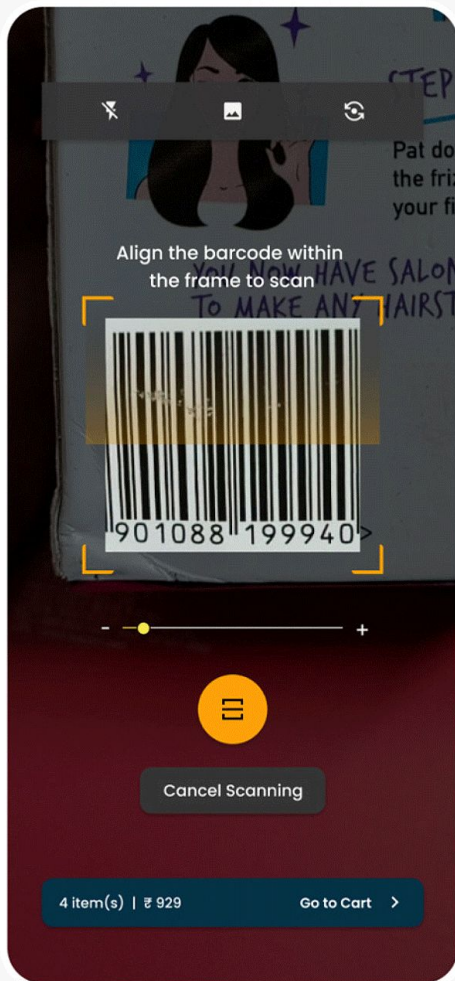
- Use of high-definition and multi-functional camera system and sensors for product identification, track user movement, and identify patterns.
- Leveraged computer vision for user recognition and tagging.
- Prescriptive and predictive data analysis via recommendation engine.

Solution Highlights

- Excludes fiat currency as a payment choice for potential customers.
- Digital interface that generates a QR code to access entry at the retail outlet and sensors further track the buyers motion.
- Virtual cart validation and just walk-out technology tracks the customer and the interaction with the store items.

Tech Stack





A Swedish Company Specializing in Fully-integrated Smart Sportswear

Established an ecommerce website for showcasing products and an app for monitoring smartwear performance.

Smart Wearable

UI/UX

E-Commerce

IoT

Outcomes

35% Increased Customer Acquisition

- Smart technology coupled with intuitive features and user-friendliness drove a higher user-adoption ratio.

20% Increased Revenue

- Real-time tracking of equipments enabled the client to identify bottlenecks and ensure 99.99% uptime of the manufacturing process.

10x Increased Traffic

- The data captured on a real-time basis is integrated with ERP which delivers insights on the operation efficiencies and manufacturing productivity.

Solutioning

Challenges

- Lack of a robust and secured infrastructure for facilitating online payments.
- Need of introducing competitive modules in the wearable that could give them an edge over others.
- Absence of the admin panel for onboarding vendors and monitoring sales, delivery, inventory etc.

Technical Spotlight

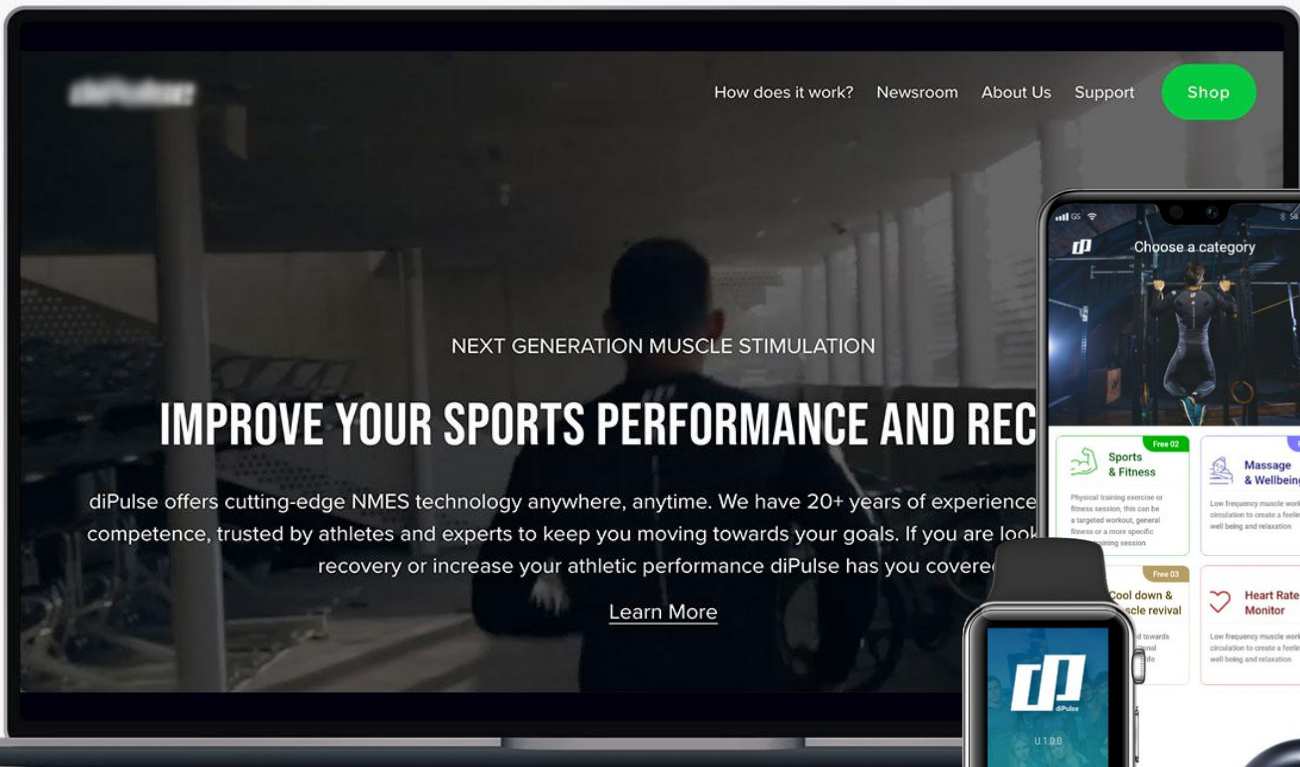
- Integrated a Stripe payment gateway to facilitate quick and easy payments across different countries and currencies.
- Used Material-UI Framework for designing various dashboards and panels featured on the website and mobile apps.
- Leveraged SQLite and JSON web tokens for enabling seamless login, logout and maintaining of user information.

Solution Highlights

- Ecommerce portal enables customers to buy products from different countries.
- Payment portal integration enabled payments to be accepted from multiple countries.
- Integration of sales report panel with different filter operations as well as a separate module for affiliate and referral program functionality.

Tech Stack





How does it work? Newsroom About Us Support

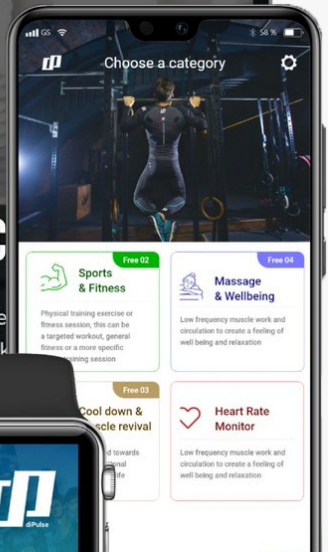
Shop

NEXT GENERATION MUSCLE STIMULATION

IMPROVE YOUR SPORTS PERFORMANCE AND RECOVERY

diPulse offers cutting-edge NMES technology anywhere, anytime. We have 20+ years of experience and competence, trusted by athletes and experts to keep you moving towards your goals. If you are looking to recover or increase your athletic performance diPulse has you covered.

[Learn More](#)



Established Clinical Practice In Rectal Cancer Diagnostics

Developed an AI-driven diagnostics system to revolutionize medical imaging methods.

Product Engineering

IoT

Data 3D Visualization

AI/ML

Outcomes

10x Accurate Diagnosis

- Real-time 3D image using a game engine improved the accuracy of diagnosis and in calculating the exact dimensions of the tumor.

50% Decreased Diagnosis Time

- Instant and non-invasive 3D imaging decreased diagnosis time significantly when compared to previous methods.

30% Increased Customer Handling

- Instant assessment and results enabled medical professionals to run patients than what was possible in traditional methods.

Solutioning

Challenges

- Lack of accurate diagnostic methods for preoperative evaluation.
- Absence of reliable method to know if cancer has spread to the lymph nodes.
- No method of collating data to create accurate 3D renders of the cancerous growth.

Technical Spotlight

- Combined the ultrasonic instrumentation device by us4us with a data acquisition model built in Python.
- Rendered in the data in realistic 3D patterns using a Unreal game engine.
- Increased the quality of output for visualization using Computer Vision Algorithms.

Solution Highlights

- 3D scan of the inner body parts which reveals infections, tumors, and abnormalities with utmost precision.
- An efficient 3-tier multi-tasking architecture was established with a machine algorithm for seamless communication between data and devices.
- Accelerated the systems efficiency by reducing the latency and increasing the image processing capabilities.

Tech Stack





World's Leading AI/ML Sports Application

Created AI-based approach to draw analytics in padel tennis for gameplay improvements.

Data 3D Visualization

IoT

AI/ML

Product Engineering

Outcomes

Real-time AI scorekeeping

- Automatic scorekeeping in real time based on international padel rules; line calling, bad balls, correct serving, etc.

Game analysis with highlights & lowlights

- Highlights (best actions) and lowlights (best fails) of matches will be recorded and supplemented with overlays of stats such as type of strike, ball speed, ball angle, and score.

Suggestions on strategy & tactics

- The match will be analyzed to identify key points where gameplay, strategies, and tactics could be improved.

Solutioning

Challenges

- Absence of user-based mobile camera setup which makes calibration tasks very difficult.
- No method of achieving excellent frames per second for real-time video production after rendering several large models.
- Different lighting condition makes ball detection and tracking also very difficult.

Technical Spotlight

- Created a UI using C++ that is both visually appealing and effectively.
- MongoDB helps store the data and derive analytics on essential metrics.
- Increased the quality of output for visualization using Computer Vision Algorithms.

Solution Highlights

- Camera calibration, leveraging computer vision for combining all the input videos into a single coordinate system.
- Person detection and pose estimation for shot classification. Reinforcement-based approach for gameplay improvement.
- Ball tracking and trajectory prediction for Scorekeeping.

Tech Stack





Engineering For A Leading Technology Software Product Vendor

Built a mobile application to track the temperature of frozen foods.

API

IoT

Geolocation

Cloud Enablement

Outcomes

Geolocation

- Wireless GPS receivers transmit GPS position information from the GPS receiver, to track geolocation.

IoT temperature sensors

- Integrated IoT temperature sensor to monitor temperature of food and share data with server.
- Rider are able to view temperature of the food in real-time.

User Experience

- Instituting a dynamic and intuitive design improved user experience and satisfaction.

Solutioning

Challenges

- Absence of IoT temperature sensor to keep track of the temperature in real time.
- No method for the admin and rider to interact and notify each other of changes.
- Admin is unable to track the rider's live location on an active ride.

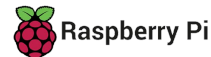
Technical Spotlight

- Power BI - an interactive data visualization software - was employed to generate reports.
- Accomplished smart and secure database capabilities with MySQL Server and attained resolute memory support.
- Integrated API for temperature sensor backed by the AWS RDS - an open-source cloud database service - to ensure seamless and hassle-free operations.

Solution Highlights

- Integrated DS18B20 Waterproof temperature sensor probe to detect any physical change to that temperature producing either an analogue or digital output.
- The rider and admin receive a warning signal with an alarm, alerting them to take essential steps for maintaining food temperature.
- Created an admin web interface with many capabilities such as editing/adding/deleting users, generating data on active rides, and receiving temperature maintenance reports.

Tech Stack



Recall Overview

Contacts

Products

My Locations

Supplier Locations

Locations

Affected
84 ⬇️ -3.41%

Completed
35 ⬆️ 0.78%

Incomplete
23 ⚖️ 0.0%

People

People Contacted
112 ⬇️ -1.41%

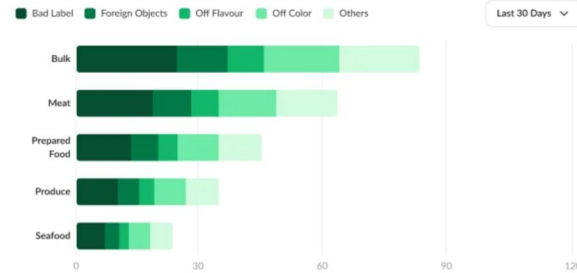
Product

Case Units Removed
1,352 ⬆️ 0.11%

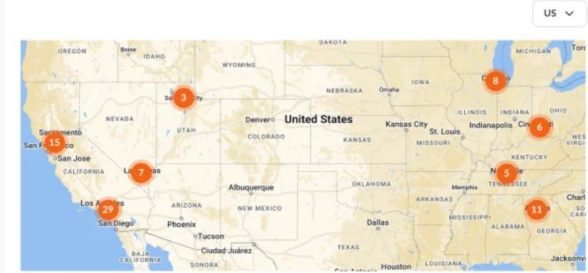
Inner-Packs Units Removed
44 ⬆️ 0.11%

Top 5 Incidents by Product Group

[See More Analysis](#)



Affected Locations



Withdrawal ID	Date Started	Status	Withdrawal Name	Withdrawal Type	Instructions	FDA Class	Reason	Products	Locations	Locations Completed	Time Elapsed
17-113	03/04/2023	Open	Avocado-Listeria	Stock Recovery	Recover all items, isolate and destr	Class 1	Listeria	14	52	78%	02:07:19
17-114	11/25/2022	Closed	Possible Allergen Contamination	Market withdrawal	Withdraw all items from all locatio	Class 2	Allergen	23	112	100%	72:06:20

A Leading Monitoring Hardware Provider

Developed a deep learning-based model capable of detecting objects in real-time.

Computer Vision

IoT

Object Detection

Machine Learning

Outcomes

Accurate Object Detection Algorithm

- A deep learning based approach to detect objects within a defined sensitive area.

Real-time Camera Feed

- Each camera captures a continuous video stream that is processed in real-time by the YOLOv5 algorithm running on a powerful computer.

User Adoption

- High-performing and intuitive model to detect presence of objects around the area rendered it most preferred by users.

Solutioning

Challenges

- Difficulty curating a deep learning model for the client's physical environment.
- Collecting bespoke datasets to train the YOLOv5 model proved tough.
- Difficulty to reduce the model's false positives (false alarms) and confine it to unidentified objects within the area.

Technical Spotlight

- Leveraged the YOLOv5 object detection algorithm, which is an open-source deep learning-based model capable of detecting objects in real-time with high accuracy.
- By using WebSockets, the system can transfer video data to the cloud computing platform or on-premise machine in real-time, reducing processing time and increasing system responsiveness.
- Leveraged AWS Cloud - an on-demand cloud computing platform - to easily store and manage the database ecosystem.

Solution Highlights

- System can be configured to scan at scheduled time. Once an object is detected, the system generates an alert indicating the location, type, and time of the detection.
- Alerts are sent to a monitoring center where trained personnel can take appropriate action.
- Alerts can also be sent to mobile devices, allowing security personnel to respond quickly to potential security threats.

Tech Stack



Recorders

Cameras

Pings

















Alerts

Warnings

Informations

Remove

Add device

Name	Latest event	Checked on	Issues in last 24h	IP address	Asset type
 ping	 Success	May 26 at 15:13		8.8.8.8	ping
 Recorder 1	 Storage summary	April 19 at 08:00			recorder
 Axis Vapix for recorder	 Exceptional storage use	April 4 at 11:00			camera
 Axis Vapix	 tns1:VideoSource/MotionAlarm	May 26 at 15:13	 15:13	213.157.66.209	camera
 Mäntypolku	 Test Storage disruption	April 4 at 14:08		192.168.2.150	recorder
 Recorder 1					recorder
 Ovikello					camera
 Mäntypolku					camera
 Etuovi					camera
 Takaovi					camera

Diagnosis feed

Live diagnosis feed from the selected assets



Thursday, May 26

 **tnsaxis:CameraApplicationPlatform/VMD/Camera1ProfileANY**  15:13
+17

Uncategorised event

Axis Vapix

213.157.66.209

 **tns1:VideoSource/MotionAlarm**  15:13
+17

Uncategorised event

Axis Vapix

213.157.66.209

 **tns1:RuleEngine/tnsaxis:VMD3/vmd3_video_1**  15:13
+17

Uncategorised event

Well-Established Multinational Chain of Private Hospitals

Engineered an IoT-based automation system to control and monitor hospital surroundings.

Automation

IoT

Sensors

AI/ML

Outcomes

Voice & Gesture Recognition

- Patients and staff utilize intelligent voice assistants or gesture recognition to activate or deactivate area lightings, adjusting thermostats, and locking doors.

Reduced Operational Overheads

- Ability to reduce operational overheads while eliminating the human workforce redundancy, letting staff focus on improved care for patients and ultimately making decisions that demand thought and innovation.

Intelligent Monitoring Of Patients

- Easily scale operations and maintain track of patients and their activities while controlling anything from room temperature to monitoring patient movements.

Solutioning

Challenges

- **Compatibility** Some appliances may not be compatible with the system, making it difficult to integrate that into the system.
- **Network failure** In case of internet failure, the system has to work without its vital cloud instances.
- **Self-diagnostic** The system should inform the user about the particular broken-down sensor.

Technical Spotlight

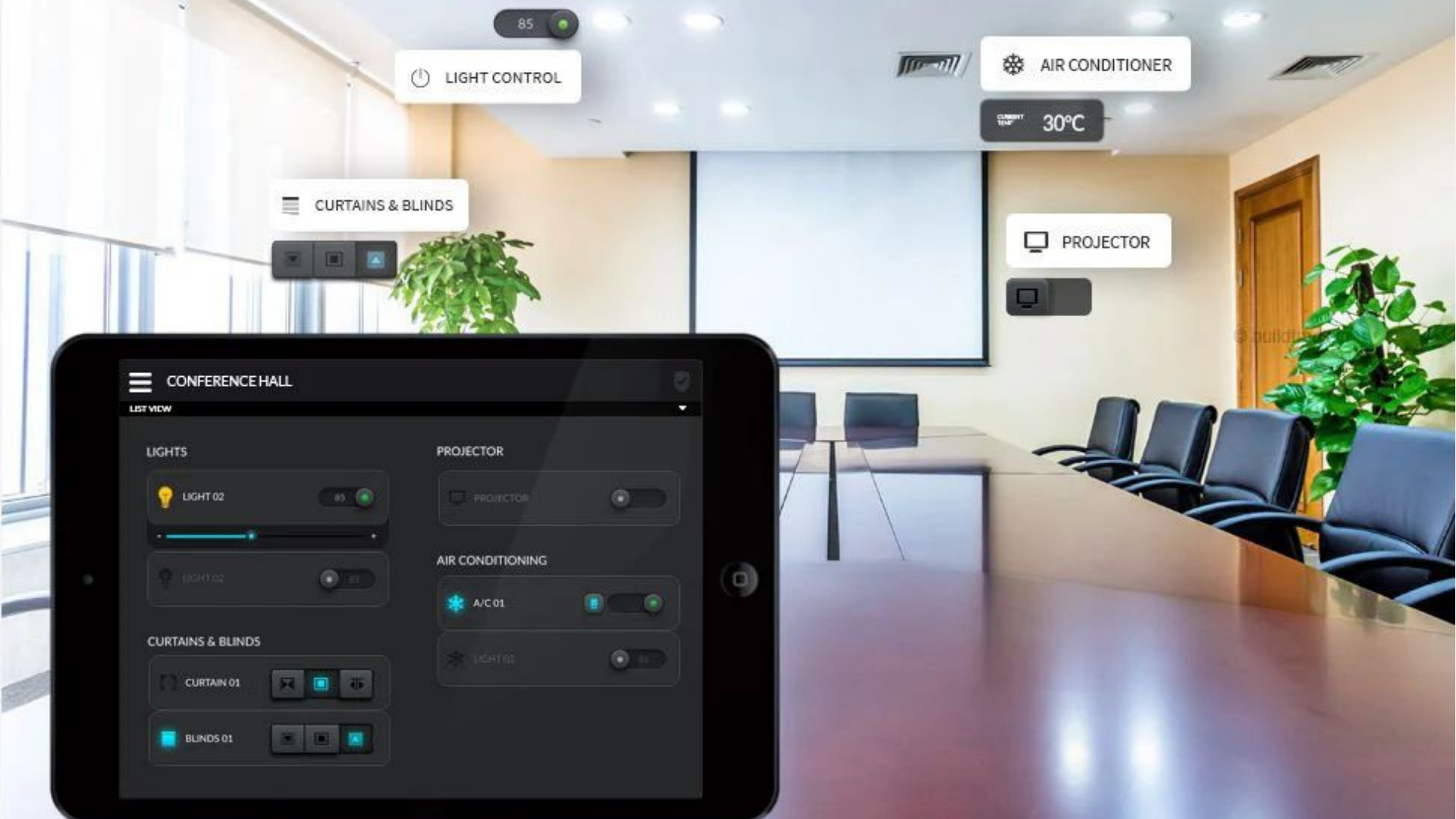
- Leveraged computer vision for user recognition and tagging.
- Use of high-definition and multi-functional camera system and sensors for product identification, track user movement, and identify patterns.
- Leveraged AWS Cloud - an on-demand cloud computing platform - to easily store and manage the database ecosystem.

Solution Highlights

- **Human Detection** - A cluster of different sensors is used to detect human presence and current state.
- **Automated climate control** - AI/ML is used to analyze the sensor data to maintain the optimal environment.
- **Handle network failure** - In case of internet failure, the system can store data locally to perform its operation, until the connection reestablished.
- **User Friendly UI** - The system has a very user-friendly UI to control the appliances remotely.

Tech Stack





85

LIGHT CONTROL

AIR CONDITIONER

CURRENT TEMP 30°C

CURTAINS & BLINDS



PROJECTOR



CONFERENCE HALL

LIST VIEW

LIGHTS

LIGHT 02 85

LIGHT 02 85

CURTAINS & BLINDS

CURTAIN 01

BLINDS 01

PROJECTOR

PROJECTOR

AIR CONDITIONING

A/C 01

LIGHT 02

Largest Healthcare Provider In India

Developed an IoT-based hospital management system to track various inventory.

Product Engineering

IoT

Data Analytics

AI/ML

Outcomes

Real-Time Tracking

- With an IoT-based inventory management system, hospitals can track their inventory in real-time, which allows for better management of stock levels and ensures that essential items are always in stock.

Improved Patient Care

- An IoT-based inventory management system ensures that essential supplies are always available, leading to improved patient care and better patient outcomes.

Streamlined Operations

- By automating the inventory management process, hospitals can streamline their operations and focus on delivering high-quality care to patients.

Solutioning

Challenges

- IoT devices can generate a vast amount of data, and it is essential to ensure that this data is accurate and reliable.
- Use of IoT devices in hospital inventory management can raise issues about data privacy and security, thus it is critical to put in place strong security measures to safeguard the data's safety and confidentiality.
- Connecting an IoT hospital inventory management system with current hospital systems like electronic health records, billing systems, and supply chain management systems can be difficult.

Technical Spotlight

- Leveraged AWS Kinesis to securely broadcast video to AWS from camera-equipped devices in hospitals. These video feeds may then be used for video playback, security monitoring, face identification, machine learning, and other analytics.
- Amazon Greengrass enables your devices to gather and analyze data closer to where it is created, respond autonomously to local events, and securely connect with other devices on the local network.
- Cloud enablement helps store the data and derive analytics on essential metrics.

Solution Highlights

- To maintain the best security we use the JWT security layer so that the exchange of data becomes secure and the system becomes secure.
- For inventory management systems we used passive RFID tags, and AI powered surveillance system.
- Several machine learning models with different sensors are used to integrate the new system with existing systems so that all pre-existing equipment can be used with the new system.

Tech Stack





Search for query



Dashboard

Dr. Profiles

Organization

Department

Settings

Analytics Overview

Northwestern Memorial Hospital

251 E Huron St, Chicago, IL 60611,
United States

Total Doctors
3.8k

Number of Cities
21



NEW
Northwestern Mem-
Hospital



Hospital Stats



289.2k

Corona Cases



96.3k

Active Cases



23.6k

Deaths



2.8k

Beds Available



98.7k

Recovered



321.4k

Testing Done



A Comprehensive AI and IoT-based Remote Telehealth Platform

Created a patient-centric mobile application to streamline the process of perioperative care.

AI/ML

Cloud Computing

Database Management

UI/UX Engineering

Outcomes

Improved Patient Outcomes

- A one-of-a-kind integrated health ecosystem digitally supplies patients with medical competence, allowing patients all over the world to get medical treatment regardless of geography or financial position.

IoT-Powered Diagnostic Tools

- Helped track the administration of drugs and the response to the treatment and reduce medical errors.

Increased Efficiency

- Used advanced next-gen technology like MongoDB - a popular NoSQL database that is designed to handle large volumes of unstructured or semi-structured data, enhancing overall operational efficiency.

Solutioning

Challenges

- Difficulty to create the teleconsultation feature utilizing Twilio, which featured capabilities such as managing recording of teleconsulting sessions and integrating pharmacy and lab test modules.
- Absence of Sokcet.io to develop a smart built-in chat application.

Technical Spotlight

- Leveraged Node.js as a back-end framework along with Angular as a front-end framework to develop dynamic web pages.
- Leveraged MongoDB to manage the database ecosystem.
- Utilized Twilio - a third party component as a customer engagement platform to build unique, personalized experience for users.

Solution Highlights

- Language Localization entails creating web pages in several languages in order to gauge user interest regionally.
- Excellent intuitive, dynamic website design for a satisfied user experience.
- Created a built-in AI-enabled chat application to provide users with quick replies.

Tech Stack





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24/7 access to top medical doctors right from the comfort of your home beyond Video

[Book a doctor now](#)

Download for free



Individuals

See how Lailya TeleHealth brings you doctor's office care where and when you need it



Physicians

Take traditional care to a new level of convenience for you and your patients.



Pharmacies

Become an exciting community destination for convenient, affordable healthcare.

Individuals

See How Lailya TeleHealth brings you

An India-based Multinational Healthcare Enterprise

Built an IoT app to collect, process, and store health data, triggering notifications for anomalies.



Outcomes

Comprehensive Health Data Collection

- Successful use of AWS IoT Core captured diverse health parameters (SPO2, HeartRate, Temperature) for comprehensive patient data.

Proactive Anomaly Detection

- Implementing anomaly detection enhanced the app's ability to identify and store anomalies in DynamoDB, improving early intervention and patient care.

Timely Notifications

- The notification system sent timely alerts for anomalies, enabling swift healthcare responses and enhancing patient safety.

Solutioning

Challenges

- Scaling the IoT cloud application to handle varying data loads.
- Ensuring seamless integration and interoperability with diverse IoT devices collecting health parameters.
- Guaranteeing the reliable delivery of notifications via email or SMS.

Technical Spotlight

- AWS Cloud provided a scalable and reliable cloud infrastructure.
- Python's readability and ease of integration facilitated the creation of robust IoT applications.
- MQTT enabled fast and reliable communication between notification system components.

Solution Highlights

- Utilize AWS auto-scaling features to dynamically adjust resources based on demand.
- Followed IoT protocols, offered clear integration guidelines, and conducted thorough compatibility tests for seamless data flow with diverse devices.
- Used redundant notification channels, implemented delivery confirmation, and integrated with reliable third-party communication services.

Tech Stack

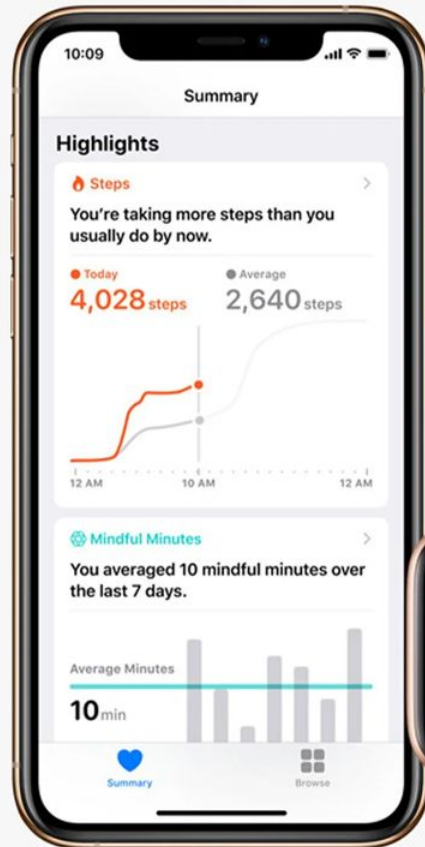
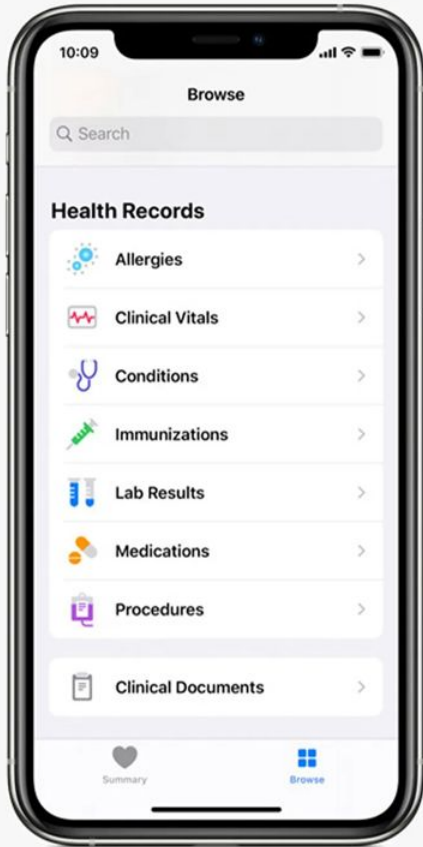


aws



MQTT





A Medical Technology Company Specializing in Medical-grade IoT Sensors

Used sockets for live device monitoring, patient profiles, disease analysis, and user-captured media.

User Engagement

IoT

Disease Analysis

Patient Monitoring

Outcomes

Real-time Device Monitoring

- Utilized IoT devices through sockets for real-time monitoring of live device movements, fostering improved patient care and health tracking.

Data-Driven Disease Insights

- Visualized disease charts and data-driven analysis enhanced medical condition understanding.

Interactive User Engagement

- Empowered users in health management by capturing live device images and videos for a more engaged healthcare experience.

Solutioning

Challenges

- Ensuring compatibility with a variety of IoT devices for consistent and reliable operation.
- Ensuring seamless and real-time capturing of live device images and video recording.
- Scaling the application to handle a growing user base and ensuring optimal performance.

Technical Spotlight

- JavaScript ensured cross-platform compatibility and seamless integration with diverse IoT devices.
- MobX provided efficient state management, ensuring smooth real-time updates during live image capture and video recording.
- MongoDB, a flexible NoSQL database, enabled seamless scaling and efficient handling of growing data volumes.

Solution Highlights

- Conducted device compatibility tests, offer clear user guidelines, and provide regular updates for new market devices.
- Optimized image/video algorithms, used efficient compression, and prioritized device compatibility for a smooth user experience.
- Used scalable cloud infrastructure, applied load balancing, and continuously optimized app performance.

Tech Stack



- +
- 📊
- 🕒
- 🔔
- ⚙️
- 🛡️
- 👤
- ?

JVM Status

UP

App Status

Healthy

Router Status

Up

Processes

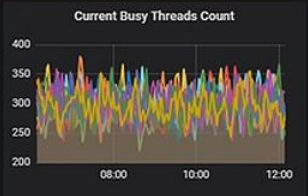
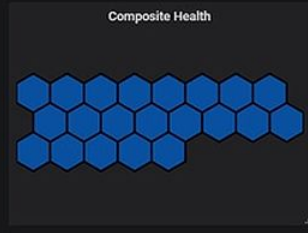
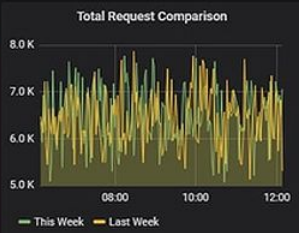
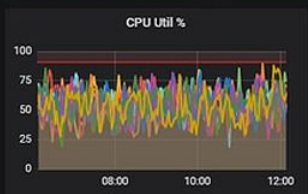
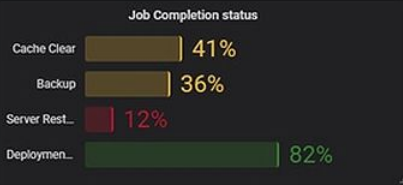
228

App Response Time

8 s

Thread Count

308



Alerts

Memory Utilization alert
ALERTING for a few seconds

A Multifaceted Conglomerate Spanning Various Industries

Created a deep learning and IoT-based solution for quality analysis in tractor production lines.

IoT

API Integration

Automation

Scalability

Outcomes

53% Enhanced Scalability

- Provided robust infrastructure support, enabling the platform to efficiently handle increased user traffic and data volume without compromising performance.

75% Improved User Experience

- Enhanced user interface responsiveness and interactivity, resulting in a more seamless and engaging user experience.

4x Enhanced Data Visualization

- Designed visually appealing dashboards and reports, facilitating better data interpretation and decision-making.

Solutioning

Challenges

- Optimizing platform performance to minimize loading times and ensure smooth user interactions.
- Handling real-time data updates and interactions efficiently to provide timely and accurate information to users.
- Safeguarding sensitive user and organizational data from potential security breaches and vulnerabilities.

Technical Spotlight

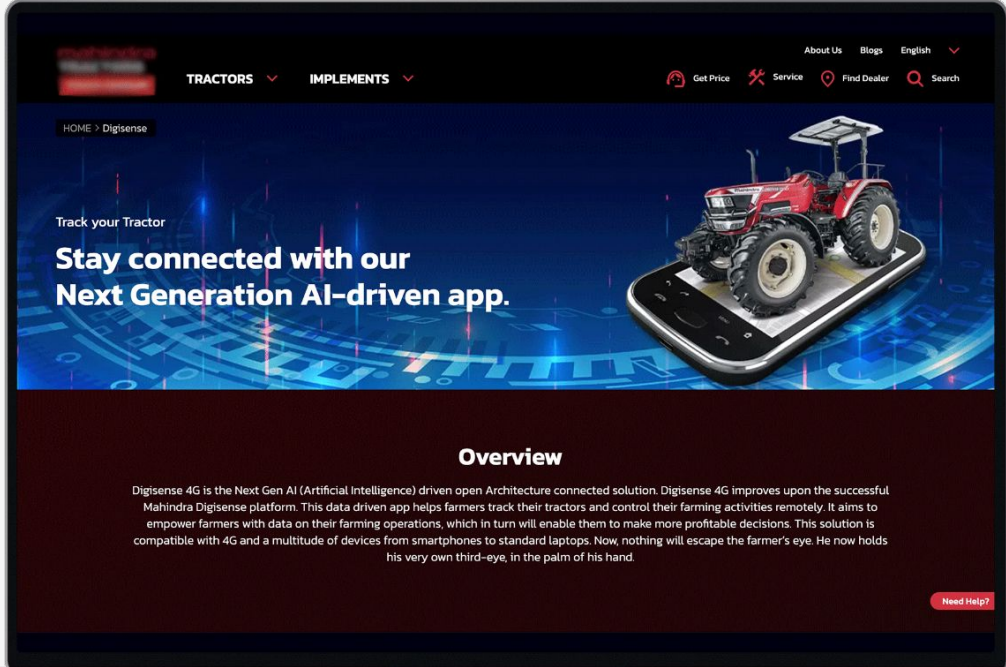
- Utilized Python and Flask frameworks to optimize code performance and identify and eliminate bottlenecks.
- Leveraged AJAX technology to enable asynchronous data processing and real-time updates.
- MySQL 5.0's security features and Google API's authentication mechanisms were utilized.

Solution Highlights

- Improved platform performance and reduced loading times, enhancing overall user satisfaction.
- Provided users with timely information, improving the overall user experience.
- Ensured robust protection of sensitive user and organizational data, mitigating security risks and vulnerabilities.

Tech Stack





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Track your Tractor

Stay connected with our
Next Generation AI-driven app.



Overview

Digisense 4G is the Next Gen AI (Artificial Intelligence) driven open Architecture connected solution. Digisense 4G improves upon the successful Mahindra Digisense platform. This data driven app helps farmers track their tractors and control their farming activities remotely. It aims to empower farmers with data on their farming operations, which in turn will enable them to make more profitable decisions. This solution is compatible with 4G and a multitude of devices from smartphones to standard laptops. Now, nothing will escape the farmer's eye. He now holds his very own third-eye, in the palm of his hand.

Need Help?

A Family-Run Company Specializing in Weighing Technology

Built an IoT-powered application to automate the materials weighing process.

Cloud Connectivity

IoT Integration

Automation

Remote Monitoring

Outcomes

70% Streamlined Operations

- Reduced manual intervention, streamlining operations and increasing overall efficiency.

6x Improved Safety Measures

- Contributed to a safer work environment by preventing overloading and reducing potential hazards.

47% Increased Productivity

- Increased productivity by empowering users to optimize loading operations effectively.

Solutioning

Challenges

- Integrating various components such as IoT devices, cloud servers, and local databases.
- Ensuring seamless synchronization between local SQLite databases and cloud servers.
- Ensuring the platform can handle increased loads and scale effectively as the user base grows.

Technical Spotlight

- Android (Java)'s modular development allowed for gradual integration of components.
- Utilized Retrofit library for RESTful API communication, enabling seamless synchronization.
- Employed Windows Server for cloud hosting and scalability.

Solution Highlights

- Simplified integration with Java's modular development, enabling a smoother development process.
- Seamless synchronization between local databases and cloud servers.
- Ensured scalability, enabling the platform to handle increased loads and accommodate growth.

Tech Stack



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Global Leader in Precision Fastening and Assembly Solutions

Built a smart automation tool to streamline the gas-pipes welding process.

Product Engineering

Automation

CMS

Sensors

Outcomes

5x Improved Visibility

- Simple yet intuitive UI that provides real-time status on the automated and remotely monitored welding activity and helps identifying abnormalities.

99% Quality Outcomes

- Automation of welding gas pipes using advanced technologies yielded precision and superior outcomes.

8x Improved Productivity

- Elimination of the traditional manual welding process boosted productivity and overcame the risk of human casualties.

Solutioning

Challenges

- Achieving high-levels of productivity was crucial as the client operates in the oil and gas sector, where factors such as time, yield, and budgets were necessary to be kept as minimal.
- Leveraging IoT Technology in the industrial framework required coupled efforts ensuring that the communication between the hardware devices and the software was thoroughly built.

Technical Spotlight

- Node.js supports the MQTT protocol, commonly used by IoT apps, making it easy to connect to independent and third-party services and prepare it for integration through multiple environments.
- IoT in welding offered delivering insights on system performance that led to identifying communications between systems and deriving performance data.

Solution Highlights

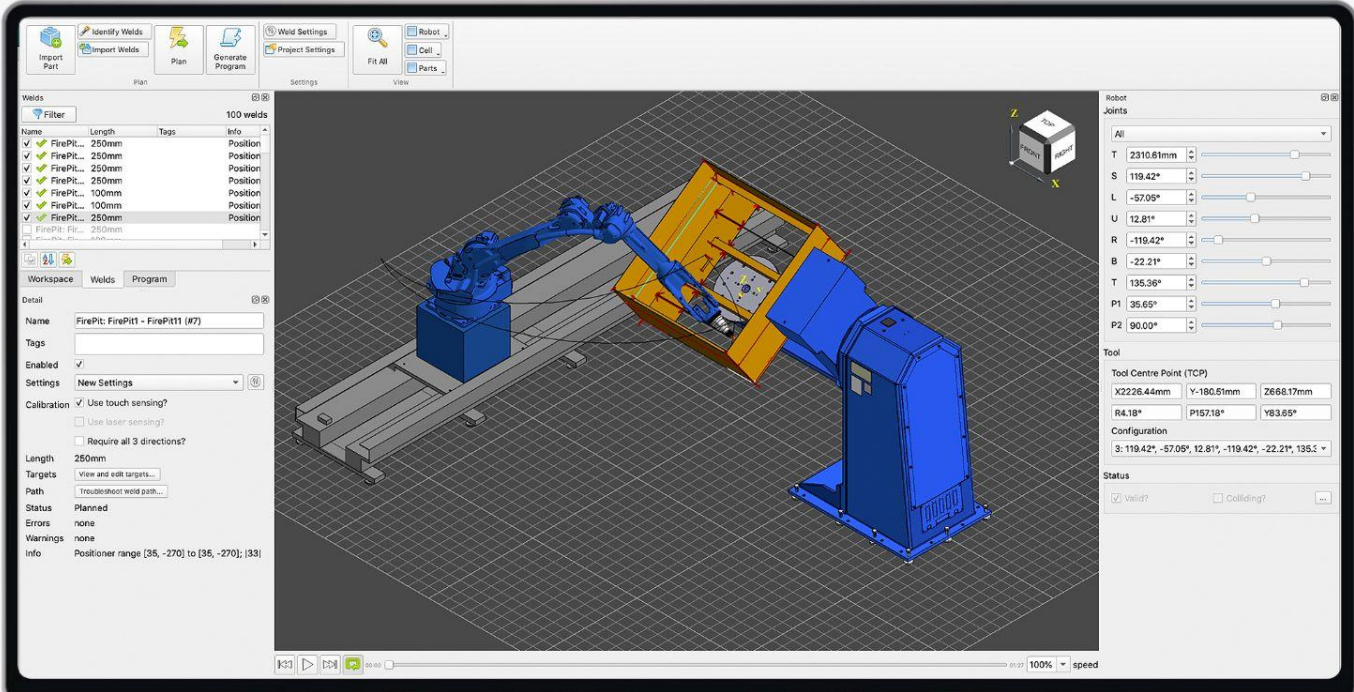
- The application developed for the oil and gas industry automates the welding process for pipes of diameter ranging from 6-8 inches. The process involves welding from inside as well as outside with well precision and accuracy.
- The project is based on the IoT platform and establishes server to server communication and server to client communication.
- Integration of various cameras and sensors to perform precise welding and rotation and movement modules to move the torch in various positions.

Tech Stack



express





Import Part Import Welds Plan Generate Program Weld Settings Project Settings Robot Cell Parts

Welds 100 welds

Filter

Name	Length	Tags	Info
✓ FirePit... 250mm	250mm		Position
✓ FirePit... 250mm	250mm		Position
✓ FirePit... 250mm	250mm		Position
✓ FirePit... 100mm	100mm		Position
✓ FirePit... 100mm	100mm		Position
✓ FirePit... 250mm	250mm		Position
FirePit: Fir... 250mm	250mm		

Workspace Welds Program

Detail

Name: FirePit: FirePit1 - FirePit11 (#7)

Tags:

Enabled:

Settings: New Settings

Calibration: Use touch sensing?
 Use laser sensing?
 Require all 3 directions?

Length: 250mm

Targets: View and edit targets...

Path: Troubleshoot weld path...

Status: Planned

Errors: none

Warnings: none

Info: Positioner range [35, -270] to [35, -270]; [33]



Robot Joints

All

T: 2310.61mm

S: 119.42°

L: -57.05°

U: 12.81°

R: -119.42°

B: -22.21°

T: 135.36°

P1: 35.65°

P2: 90.09°

Tool

Tool Centre Point (TCP)

X226.44mm	Y-180.51mm	Z668.17mm
R4.18°	P157.18°	Y83.85°

Configuration: 3: 119.42°, -57.05°, 12.81°, -119.42°, -22.21°, 135.36°

Status

Valid? Colliding? ...

0:37 100% speed



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