Improwised Technologies
Projects

Project Portfolio
Cloud managed hosted service provider

CLIENT OVERVIEW

A California based Client provides hosted services for Apache Pulsar and Trino, empowering large enterprises to accelerate AI adoption.

We developed a cloud-hosted platform with backend and frontend support for hosting Apache Pulsar and Trino. The platform features a multi-region, multi-cloud, fault-tolerant architecture to manage client instances efficiently.

PROJECT BRIEF

CHALLENGES

- Building a robust, scalable infrastructure for distributed messaging and SQL queries.
- Seamless integration with AWS, GCP, and Azure while ensuring compliance.
- Automating billing and monitoring for a usage-based model.

OUR CONTRIBUTION

- **Cloud-Native Architecture Design -** Designed a Kubernetes-based microservices platform for high availability and fault tolerance.
- **Automation and Scalability -** Automated provisioning and deployment with Infrastructure as Code (IaC). Enabled horizontal scalability for workload fluctuations.
- **Custom Services and Billing -** Created tailored service packages for varying client needs. Integrated a transparent, usage-based billing system.
- **Health Monitoring and Notifications -** Implemented tools for real-time system health monitoring and notifications.
- **Multi-Cloud Compliance -** Ensured adherence to AWS, GCP, and Azure compliance standards.
- **Interactive Client UI -** Delivered a user-friendly interface for seamless management.

IMPACT DELIVERED

- Achieved 99.9% uptime, ensuring uninterrupted operations.

- Reduced provisioning time by 70% through automation.

- Scaled infrastructure to handle 2x projected workloads seamlessly.

- Enhanced client satisfaction with a robust, fault-tolerant multi-cloud platform.

INTEGRATED LEAD SOLUTION PROVIDER

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CLIENT OVERVIEW

A client helps businesses manage lead generation and campaigns effectively using a feature-rich platform.

PROJECT BRIEF

We built a dedicated, scalable platform for client with multi-channel components and robust backend systems to handle large amounts of data. The solution streamlined lead budget allocation, campaign management, and third-party integrations.

CHALLENGES

- Managing massive datasets from multiple channels.
- Streamlining integrations for call tracking, analytics, and click monitoring.
- Designing a scalable architecture for handling peak loads.

OUR CONTRIBUTION

- **Scalable Infrastructure:** Designed a cloud-native, horizontally scalable architecture.
- **Optimized Data Management:** Ensured minimal latency and high performance for data handling.
- **Seamless Integrations:** Enabled provisioning, call tracking, click monitoring, and webform analysis.
- **Custom Dashboard:** Delivered an intuitive UI for streamlined management and reporting.
- **Automated Deployments:** Implemented CI/CD pipelines for efficient updates and releases.

IMPACT DELIVERED

- Increased lead handling capacity by 40%.

- Reduced campaign setup time by 60% through automation.

- Improved platform performance to support 1M+ daily leads processed.

COLLABORATIVE GREETING CARD PLATFORM

CLIENT OVERVIEW

Client is a global collaborative greeting card platform, faced performance and cost challenges due to a complex infrastructure setup.

PROJECT BRIEF

The platform, hosted on Amazon ECS with separate RDS instances for staging and production across two AWS regions, experienced latency issues, unreliable deployments, and high operational costs, impacting scalability and user trust.

CHALLENGES

- Migrating to a single region without data loss or downtime.
- Addressing security vulnerabilities and inefficiencies in the Jenkins CI pipeline.
- Eliminating redundant infrastructure while ensuring disaster recovery and system reliability.

OUR CONTRIBUTION

- **Kubernetes Migration and Automation:** Migrated the application to a self-managed Kubernetes cluster in a single AWS region, enabling infrastructure automation and easier maintenance.
- **Environment Consolidation:** Unified EFS and RDS into one region and used Kubernetes namespaces to isolate staging and production, reducing redundancy.
- **CI/CD Implementation with Drone CI:** Replaced Jenkins with a secure, container-based Drone CI pipeline, integrated GitHub-based login for efficient user management, and added Slack alerts for real-time monitoring.

IMPACT DELIVERED

- **Enhanced Performance:** Achieved 40% faster deployment times and significantly reduced latency by consolidating environments and simplifying infrastructure.
- **Cost Optimization:** Lowered infrastructure costs by 50% by eliminating redundant systems and streamlining operations.
- **Improved Reliability:** Boosted deployment reliability with a secure, automated CI/CD pipeline and a robust disaster recovery plan.
- **Increased User Trust:** Enhanced platform stability and performance, leading to greater user satisfaction and global engagement.

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HOSPITAL MANAGEMENT SYSTEM PROVIDER

CLIENT OVERVIEW

Our client, a Hospital Management System provider, operates a microservices-based web application essential for managing patient records, billing, and administrative workflows. Initially using Jenkins for CI/CD, their development and deployment processes faced scalability challenges.

PROJECT BRIEF

The client sought to modernize their infrastructure to improve scalability, reduce cognitive load for developers, and accelerate release cycles. Our goal was to establish a GitOps-driven workflow using, while implementing an Internal Developer Platform to streamline operations and enable developers to focus solely on application development.

CHALLENGES

- Deployments through Jenkins were slow, prone to errors, and lacked automation.
- Coordinating multiple microservices deployments was complex and time-consuming.
- Existing infrastructure provisioning was not optimized, resulting in high costs.
- Insufficient monitoring tools hampered effective debugging and system reliability.

OUR CONTRIBUTION

- **GitOps Transition:** Migrated from Jenkins to GitLab CI and Flux CD for automated, GitOps-driven deployments.
- **Internal Developer Platform:** Built an IDP that provided self-service capabilities for developers, eliminating infrastructure management concerns.
- **Kubernetes Deployment:** Deployed microservices to a Kubernetes cluster, enabling independent scaling and robust orchestration.
- **Optimized Infrastructure:** Provisioned resources using Terraform, consolidating environments for cost efficiency and ensuring high availability.
- **Monitoring and Logging:** Set up Prometheus and Grafana for real-time monitoring, along with Slack-based alerts for proactive issue resolution.

IMPACT DELIVERED

Accelerated Release Cycles: Reduced release cycles from 3 weeks to 3 days through GitOps and CI/CD automation.

Improved Developer Productivity: Developers now focus solely on application code, leveraging the IDP for seamless deployments and debugging.

Scalability and Reliability: Enhanced platform stability and performance, ensuring zero-downtime deployments and robust disaster recovery.

Cost Savings: Achieved a 50% reduction in infrastructure costs by optimizing resource utilization and consolidating environments.

Streamlined Operations: Automated provisioning and monitoring reduced manual intervention, increasing operational efficiency.

TRADING JOURNAL ANALYTICS PLATFORM

CLIENT OVERVIEW

Client is a trading journal and analytics platform helping users evaluate trading strategies and portfolios through detailed metrics and simulations.

PROJECT BRIEF

The client aimed to develop a stock market simulator powered by historical stock price data. The goal was to create an interactive system for analysis, portfolio management, and delivering actionable trading insights.

CHALLENGES

- Managing and querying large datasets of historical stock prices.

- Developing a performant simulator for realistic trading scenarios.

- Integrating payments securely.

OUR CONTRIBUTION

- **Efficient Data Handling:** Designed a database schema for high-performance queries using Golang and MySQL.
- **Stock Market Simulator:** Built a simulator to replicate market conditions and evaluate trading strategies.
- **Frontend Enhancements:** Used Vue.js to create an intuitive interface for trading journal analysis.
- **Payment Integration:** Integrated Razorpay for secure and seamless payments.

IMPACT DELIVERED

- **Enhanced User Engagement:** Improved user retention and increased engagement by 35% through a powerful, feature-rich simulator.
- **Actionable Insights:** Empowered traders with data-driven decision-making by providing meaningful and actionable insights.
- **Optimized Performance:** Reduced query response time for historical stock data by 50%, ensuring faster and more efficient access.
- **Scalable Simulation Processing:** Successfully handled over 500,000 simulations monthly with minimal latency, supporting seamless user experience.

PROJECT PORTFOLIO

IOT VENTILATION SOLUTIONS PROVIDER

CLIENT OVERVIEW

A leading manufacturer of IoT-enabled EC inline fans focused on delivering innovative and energy-efficient solutions for ventilation systems.

The client sought to optimize their AWS infrastructure to reduce costs and improve scalability while maintaining reliable IoT-enabled operations for their growing user base.

PROJECT BRIEF

CHALLENGES

- High costs of AWS IoT Shadows and IoT Core Jobs for firmware updates.
- Expensive DynamoDB usage for storing device data.
- Scalability issues with the existing setup as the user base expanded.

OUR CONTRIBUTION

- **Cost-Effective Database Migration:** Replaced DynamoDB with PostgreSQL and TimeScaleDB for efficient user authentication, metadata, and historical data storage.
- **Custom API and MQTT Server:** Developed a REST API in Golang with secure user authentication and a self-managed MQTT server to handle device communication.
- **Optimized Firmware Updates:** Utilized S3 and CloudFront for secure firmware distribution triggered via MQTT topics.
- **Infrastructure Automation:** Employed Terraform for provisioning and managing production and staging environments seamlessly.

IMPACT DELIVERED

- **Cost Savings:** Reduced AWS operational expenses by migrating to PostgreSQL and optimizing firmware updates.

- **Enhanced Scalability:** Delivered a robust, scalable infrastructure to support the growing user base.

- **Improved Efficiency:** Achieved secure and reliable device control and communication, enhancing user satisfaction.

- **Streamlined Deployment:** Ensured swift deployment and maintenance with automated infrastructure provisioning.

PRIVACY FOCUSED SEARCH ENGINE

CLIENT OVERVIEW

Client is a privacy-focused search engine designed for enhanced security and user anonymity.

We contributed to client by implementing a "wiki box" feature for Wikipedia data parsing, resolving bugs, and improving platform performance.

PROJECT BRIEF

CHALLENGES

- Ensuring fast and accurate parsing of Wikipedia.

- Implementation of Wiki box feature

- Optimizing system performance under high traffic.

OUR CONTRIBUTION

- **Wiki Data Parsing:** Designed and implemented a robust system for extracting and displaying structured Wikipedia content.
- **Performance Optimization:** Enhanced backend performance using caching and query optimizations.

IMPACT DELIVERED

- **Enhanced User Experience:** Delivered real-time, accurate wiki box data, ensuring seamless functionality and user satisfaction.
- **Optimized Performance:** Achieved 30% faster load times through advanced caching and query optimizations.
- **Accuracy and Reliability:** Ensured 100% accuracy in wiki box content, building trust and engagement among users.

TRADING ALGORITHM PLATFORM

CLIENT OVERVIEW

Client is a trading algorithm platform for stocks and cryptocurrencies.

PROJECT BRIEF

We developed an installable Go Client package for the Coin Metrics API with comprehensive functionality and documentation.

CHALLENGES

- Building a robust client library for seamless interaction with the Coin Metrics API.

- Ensuring the solution was reliable and well-tested.

OUR CONTRIBUTION

- **Go Client Package Development:** Built a highly reliable Go Client for historical time series data.
- **Testing and Documentation:**Provided comprehensive unit tests and thorough documentation.
- **Streamlined Data Access:** Delivered a high-quality package enabling streamlined data access.
- **Simplified Workflows:** Simplified client workflows with detailed, easy-to-follow documentation.

IMPACT DELIVERED

- Delivered a Go Client with 99.99% reliability for API interactions.

- Reduced integration time for clients by 40%.

DIRECTORY LISTING SERVICE PROVIDER PLATFORM

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CLIENT OVERVIEW

Client helps businesses grow through search and directory listing-based online marketing.

We maintained and enhanced client's platform over three years, focusing on stability and scalability.

PROJECT BRIEF

CHALLENGES

- Managing multiple Laravel PHP apps and their dependencies.

- Ensuring system stability and adapting to changing user needs.

OUR CONTRIBUTION

Maintenance and Upgrades:
Streamlined development processes and introduced CI/CD for reliable updates.

Testing and Documentation:
Enhanced platform performance through database optimizations.

IMPACT DELIVERED

- Improved platform uptime to 99.8%.

- Enhanced scalability to support a 50% increase in active users.

- Reduced deployment time by 70% with CI/CD.

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DATING COMMUNITY PLATFORM

CLIENT OVERVIEW

Client is a dating community comparison platform built from scratch for seamless user interaction.

We developed and maintained the platform, combining Angular.js, Laravel, and MySQL technologies.

PROJECT BRIEF

CHALLENGES

- Creating a highly interactive platform from the ground up.

- Ensuring consistent performance for a growing user base.

OUR CONTRIBUTION

Custom Platform Development:
Designed and implemented core platform features and APIs. Successfully launched a scalable platform with a rich user experience.

System Performance:
Regular updates and performance tuning.

IMPACT DELIVERED

- Launched a platform handling 250,000+ users monthly with 99.9% uptime.

- Reduced user load time by 40% with optimized APIs and performance tuning.

ABA ED-TECH PLATFORM

CLIENT OVERVIEW

An EdTech platform specializing in applied behavior analysis (ABA) for autism care providers.

We developed platform from scratch and later transitioned it to an in-house team after two years.

PROJECT BRIEF

CHALLENGES

- Managing sensitive educational data.

- Building a scalable platform with real-time capabilities.

OUR CONTRIBUTION

Cloud-Native Design:
Built on Node.js and MongoDB with AWS deployment.

Real-Time Features:
Integrated real-time analytics and monitoring. Enabled precise teaching methods through a user-friendly platform.

IMPACT DELIVERED

- Enabled 2x faster data processing for real-time ABA analytics.

- Increased client adoption by 60% due to a user-friendly interface.

PROJECT PORTFOLIO

INNOVATIVE WELLNESS PLATFORM

CLIENT OVERVIEW

Client is a marketplace platform for health coaches offering personalized health management services.

We developed and deployed a marketplace platform, integrating Stripe for payments and using Node.js/React.js.

PROJECT BRIEF

CHALLENGES

- Building secure payment processes.

- Designing a responsive, user-friendly interface.

OUR CONTRIBUTION

Responsive Design:
Built a modern interface for seamless user interaction.

Cloud Deployment:
Hosted on AWS for high availability and security.

IMPACT DELIVERED

- Delivered a secure payment system processing $1M+ transactions monthly.

- Reduced page load time by 50% for seamless user interaction.

DEVOPS LEARNING PLATFORM

CLIENT OVERVIEW

A client was a MOOC platform for DevOps learning using real virtual machines.

We developed the platform from scratch and open-sourced it after its closure.

PROJECT BRIEF

CHALLENGES

- Creating an interactive MOOC platform.

- Ensuring seamless VM integration.

OUR CONTRIBUTION

Custom Development:
Built core functionalities for managing virtual machines and course content. Provided an innovative platform for DevOps education.

IMPACT DELIVERED

- Supported over 10,000 learners with interactive VM-based courses.

- Achieved 95% uptime for hands-on DevOps training environments.