

Experienced Full-Stack Web Developer with 4+ years of expertise designing, developing, and deploying scalable web applications. Proficient in **Next.js, React, TypeScript/JavaScript, and Node.js** with a strong focus on delivering user-centric solutions and optimizing performance. Specialized in developing solutions that incorporate **data analytics, real-time communication, IoT, and AI integration**.

PROFESSIONAL EXPERIENCES

Full-stack Web Developer | Aug 2023 – Present

Ascenity Solutions, Universiti Malaysia Pahang Al-sultan Abdullah, Pekan, Pahang

- Successfully delivered 8 complex software solutions, with over **80%** project success rate and consistent client satisfaction.
- Designed and implemented **CAM Kenderaan**: a secure geospatial vehicle telemetry system using CAN bus protocols, GPS, IMU sensors, and SHA256 to improve data integrity and visualization for Cyber Security Malaysia.
- Built the **UMPSA IBMS Hub**: a centralized platform with Mapbox GL, and Telegram bot API, that allows for real-time monitoring of building systems and **cuts down management effort by 30%**.
- Developed **CAM Muka**, a real-time facial recognition and people-counting system using MyGov*Net integration and WebSockets, to entirely increase the efficiency of monitoring in Penjara Kajang.
- Wrote a dynamic ISO 24817-compliant **Piping Defect Calculation Engine** for GAPURA
- Delivered the **Polymer Production Rate Classification** and **PPE Compliance Monitoring** systems using TensorFlow.js, drones, and CCTV feeds with a **95% prediction accuracy**
- Continued the development of **CERDAS** for multiple new sub modules and features with the purpose to centralize emergency incident reports.
- Developed the improvement of the **Fish Pond Monitoring System** with Recharts and MQTT data logger to conduct real-time water quality analysis that **reduces manual monitoring**.
- Designed and optimized secure, bandwidth-efficient data pipelines across multiple systems, which has **improved real-time processing latency by 20%**
- Led the integration of Telegram Bots for alerting and reporting
- Provided technical consultation on system design, leading to scalable, maintainable architectures.
- Mentored junior developers, conducted code reviews, and introduced coding standards
- Produced project documentations; SRS, SDD, User manual, Testing documents, UAT and UAT sign-off form

Full-stack Web Developer (Degree Internship Trainee) | Feb 2023 – Aug 2023 (6 months)

Satok Bridge Digital Sdn. Bhd, Suite 11, TEGAS Digital Village, Sama Jaya High Tech Park, Muara Tebas Land District, 93350 Kuching

- Collaborated with Satok Bridge Digital for **MyHackathon 2nd Cohort: Secured RM250k** in funding and won **gold medals from CITREx and ITEx**.
- Contributed to the continuation development of a web application for an **Elephant Intrusion Detection and Deterrence System** for Satok Bridge, mitigating human-elephant conflict.
- Developed a web-based **IoT Water Quality Monitoring System** for the **Department of**

SKILLS

Front-End Development:

Next.js, React, React Native, Typescript, Javascript (ES6+), Zod, Zustand, Redux, React Native, Tailwind CSS, Chakra UI, shadcn, Framer Motion, SWR, HTML, HTML5, CSS3/SCSS

Back-End Development:

Node.js, Fastify, Express, Typescript, Javascript (ES6+), Zod, Next.js API, Server Action, Prisma (ORM), GraphQL, PostgreSQL, MongoDB,, Tensorflow.js, FormulaJS, HyperFormula, NextAuth, Nodemailer

Real-time Systems & IoT:

WebSocket, Socket.io, MQTT, WebRTC, CAN Bus, Bluetooth Low Energy (BLE), ThingsBoard, Arduino (C++), Raspberry Pi, RTMP/RTSP

Data Analytics & AI:

Tensorflow.js, Recharts, Chart.js, Data Visualization, Predictive Analysis, Real-time Monitoring

Devops & Infrastructure:

PM2, Nginx, AWS (EC2, S3, RDS), Docker, Github Actions, Vercel

Tools:

Git, GitHub, GitLab, Postman, Insomnia, Trello, Mapbox GL API, Leaflet, Telegram Bot API,

Web Security:

SSL, CORS, CSRF, XSS, SHA256, OAuth, JWT, RBAC

Misc:

Stripe, Dynamic PDF/CSV Generation, Static Content Management, IoT Data Logging

Fisheries Malaysia

- Spearheaded the development of the **CERDAS** project, providing mentorship and guidance to intern trainees throughout the project lifecycle.
- Mentored and oversaw the development of an attendance recording system utilizing biometric integration.
- Conducted research on **Bluetooth Low Energy (BLE)** integration for a medical device designed to calculate glucose levels from blood samples.
- Implemented **ThingsBoard** for in-house IoT data monitoring at Satok Bridge
- Supervised Satok Bridge developer on the **BoyakSafe mobile app project (Flutter)**, ensuring successful development and delivery of the application.
- Developed a **Telegram bot sub-service script** for notifying elephant intrusions and CERDAS emergencies (as separate system)
- Produced project documentations; SRS, SDD, User manual, and UAT

Full-stack Web Developer | Dec 2022 – Feb 2023 (3 months)

Ascenity Solutions, Universiti Malaysia Pahang Al-sultan Abdullah, Pekan, Pahang

- Founded Ascenity Solutions, **achieving market traction within 6 months.**
- Developed a **Safety Attire Detection System for Kaneka Corporation**, enhancing workplace compliance and safety measures.
- Built an online **Home Tutor Recruitment Platform** with Stripe integration, streamlining tutor-student connections, payment processing, and automated notifications.
- Implemented an affiliation system with promotional codes, **tracking benefits and boosting client engagement by 15%.**
- Designed a secure refund approval workflow, improving financial transparency and client trust.

Full-stack Web Developer (Research Assistant) | Jan 2020 – Dec 2022 (2 years 11 months)

DiTec, Universiti Malaysia Pahang Al-sultan Abdullah, Pekan, Pahang

- Led development of **CEISys**, integrating it with **CERDAS** to enhance emergency response systems, and **winning a Gold Medal at CITREx.**
- Led the development of a **Prawn Water Quality Monitoring System** in the next phase of the project
- Developed a web application for **Vegetable Growth Monitoring**, providing a meaningful analytics dashboard and data exporting feature.
- Collaborated on IoT-based **smart agriculture systems**, implementing MQTT protocols for real-time data transfer.
- Participated in **prototype testing and validation**, ensuring optimal functionality in real-world conditions.
- Produced project documentations; proposal, SRS, and SDD

Full-stack Web Developer (Diploma Internship Trainee) | Aug 2019 – Jan 2020 (6 months)

DiTec, Universiti Malaysia Pahang Al-sultan Abdullah, Pekan, Pahang

- Led the development of the Confined **Emergency Intercom System (CEISys)** on the web application and server.
- Led the development of a **Prawn Water Quality Monitoring System**, enabling real-time monitoring and data-driven decision-making to improve prawn health and yield.
- Gathered and analyzed system requirements for the **Vegetable Growth Monitoring** project
- Designed and tested low-cost sensor integrations to make IoT systems more accessible for small-scale projects.
- Conducted workshops on IoT development for peers, sharing best practices and improving overall team expertise.

EDUCATION

UNIVERSITI MALAYSIA PAHANG AL-SULTAN ABDULLAH (UMPSA)

Oct 2023 | Bachelor Degree in
Computer Science (Software
Engineering) with honours

Oct 2020 | Diploma in Computer
Science

HONORS & AWARDS

CITREx – Gold Medal with
GajahSafe Elephant Intrusion
Detection and Deterrence System

CITREx – Gold Medal with Confined
Emergency Intercom System

CITREx – Gold Medal with CCTV
and Drone Based PPE Detection
System

CITREx – Gold Medal with
Image-based Pellet Counter and
Analytics

ITEx – Gold Medal with GajahSafe
Elephant Intrusion Detection and
Deterrence System

CITREx – Silver Medal with
Image-based Automated Food
Identification and Billing System

**Arduino Beginner Exhibition – #1
place** with Adaptive Smart Street
Lighting System

LANGUAGES

- Bahasa Melayu
- English

INTERESTS

- Game development
- Game modding
- Programming
- 3D modeling
- Drawing
- Gaming

PROJECTS

– 2024

- **CAM Kenderaan - Secure Vehicle Telemetry and Geospatial Data Blackbox**

Clients: Cyber Security Malaysia, UMPSA

Role: Lead developer / Full-stack developer

Technologies: Next.js, React, Typescript/Javascript, Fastify, Node.js, Zustand, Recharts, Next Auth, Prisma, PostgreSQL, Arduino, C++, SHA256, Leaflet, OpenStreetMap

Highlights: Geospatial telematics visualization, Data serialization and deserialization, Data integrity with SHA256, CAN bus integration, CAN bus decoding using open-source DBC, GPS and IMU sensors, Data analytics and prediction, Dynamic PDF and CSV documents generation

- **CAM Muka - Real-time Inmates Facial Recognition and People Counting**

Clients: Cyber Security Malaysia, Solara Group, Vulsan X, Penjara Kajang

Role: Full-stack developer

Technologies: Next.js, React, Typescript/Javascript, Fastify, Node.js, Zustand, Recharts, Prisma, PostgreSQL, Websocket, Socket.io

Highlights: Real-time recognition and people counting data analytics and visualizations, Facial recognition image data streaming, Real-time device status updates, Complex network integration (MyGov*Net), Centralized data center over private network, Bandwidth optimization for real-time data throughput, Dynamic PDF and CSV documents generation

- **UMPSA IBMS Hub - Centralized UMPSA IBMS Navigation and Management System**

Clients: UMPSA

Role: Full-stack developer

Technologies: Next.js, React, Typescript/Javascript, Fastify, Node.js, Zustand, Recharts, Mapbox GL, Prisma, PostgreSQL, Websocket, Telegram Bot API

Highlights: Real-time IBMS server status monitoring and update, Third-party auth service integration, Automated notification system using Telegram and WhatsApp API, User and server activity logging

– 2023

- **CERDAS - Centralized Emergency Response & Disaster Assistance System**

Clients: Universiti Malaysia Pahang Al-sultan Abdullah (UMPSA), DiTec UMPSA

Role: Lead developer / Full-stack developer

Technologies: Next.js, React, Typescript/Javascript, Fastify, Node.js, Redux, Recharts, Prisma, PostgreSQL, WebRTC, Websocket, MQTT

Highlights: Video conference using WebRTC and Websocket for signaling, Real-time data visualization, MQTT for real-time status update, Real-time communication interface, Role-based access control (RBAC), Telegram bot API integration for real-time notification

- **Fish Pond Water Quality Monitoring**

Clients: Department of Fisheries (DOF), Satok Bridge Digital Sdn. Bhd.

Role: Full-stack developer

Technologies: Next.js, React, Typescript, Node.js, Fastify, Next Auth, Prisma, PostgreSQL, Recharts

Highlights: Water quality data visualization, Static content management, Real-time data deserialization, Dynamic CSV documents generation

- **ISO 24817-Compliant Piping Material and Repair Calculation Engine**

Clients: Gapura Solution Sdn. Bhd, UMPSA

Role: Lead developer / Full-stack developer

Technologies: Next.js, React, Typescript, Node.js, Fastify, Zustand, Recharts, Framer motion, HyperFormula, FormulaJS, XLSX, Next Auth, Prisma, PostgreSQL

Highlights: Excel-based dynamic calculation engine, Version-controlled formulas, Custom handler for file load and save, Real-time approval workflow, Role-based access control (RBAC), Dynamic PDF documents generation

- **Polymer Production Rate Classification System**

Clients: Kaneka Corporation, UMPSA

Role: Full-stack developer

Technologies: Next.js, React, Typescript, Node.js, Websocket, Tensorflow.js

Highlights: ODBC-Java data extraction using websocket relay, Tensorflow.js Graph model integration, Threshold-based classification, Real-time production rate prediction and data visualization

- **Factory Worker PPE Compliance Monitoring with Drones and CCTVs**

Clients: Kaneka Corporation, UMPSA

Role: Full-stack developer

Technologies: Next.js, React, Typescript, Node.js, Express, Zustand, Framer motion, SWR, Socket.io, Websocket, MQTT, RTMP/RTSP

Highlights: RTMP and RTSP image streaming over private network, Fine-grained PPE image data annotation, Real-time AI prediction result streaming, Dynamic routing for unique image streaming source, Non-compliance worker image cropping and logging

– 2022

- **GajahSafe Elephant Intrusion & Deterrence**

Clients: KPKM, Satok Bridge Digital Sdn. Bhd

Role: Full-stack developer

Technologies: Next.js, React, Typescript/Javascript, Tailwind, Node.js, Zod, Zustand, Recharts, Framer motion, Map API, SWR, Next Auth, Prisma, PostgreSQL, MQTT

Highlights: Real-time elephant intrusion detection and deterrence, Geospatial intrusion alert and frequency visualization, Telegram API integration for intrusion notification, Elephant incident reporting and logging, Intrusion sensors management

- **SIPFOS Prawn Pond Water Quality Monitoring**

Clients: Serandu Aquaponic System Sdn. Bhd.

Role: Full-stack developer

Technologies: Next.js, React, Typescript/Javascript, Zod, Node.js, Chart.js, SWR, Next Auth, Prisma, PostgreSQL, MQTT, Arduino

Highlights: Real-time water quality data visualization, Telegram API integration for real-time notification, Device activity notification, IoT data logging, Static content serving with custom content management, Dynamic CSV document generation

- **Fugentutor Online Home Tutor Recruitment Platform**

Clients: Fugen Legacy

Role: Lead developer / Full-stack developer

Technologies: Next.js, React, Javascript, Chakra UI, Framer motion, Node.js, Stripe, Node mailer, SWR, Next Auth, Multer, Prisma, PostgreSQL

Highlights: OAuth-based social account linking and password recovery, User profile and tutor portfolio customization, Parent job posting and tutor application workflows, Two-party approval system with secure payment integration, Affiliate system with promotional code generation and benefit tracking, Automated notification and promotional emails, Secure refund approval workflow, Dynamic file uploads,

- **Image-based Hydroponic Vegetable Growth Monitoring System**

Clients: JustGood, UMPSA

Role: Full-stack developer

Technologies: React, Node.js, Javascript, Express, Ant Design, Redux, Framer motion, Amcharts, MQTT, Websocket, Mongoose ODM, MongoDB

Highlights: Real-time vegetable growth stage visualization with accurate x-y proportional mapping on troughs, Data analysis with insights and trends, Exportable data report, Detailed inference logging for growth tracking, Crop yield estimation based on historical data, Live data updates

- **CEISys Confined Emergency Intercom System**

Clients: DiTec, UMPSA

Role: Full-stack developer

Technologies: React, Node.js, Javascript, Express, WebRTC, Redux, Strapi CMS, Prisma ORM, PostgreSQL, Websocket, Raspberry Pi

Highlights: Real-time video and audio communication over private network using WebRTC, Low cost IoT device solution, Map-based event notification and alert visualization, Centralized emergency response control, Emergency incident reporting and notification, Telegram bot API implementation

- **Latex Glove Former Indexing & Misalignment Monitoring System**

Clients: TopGlove Bhd.

Role: Full-stack developer

Technologies: Angular, Node.js, Javascript, Express, NgRx, Chart.js, XLSX, Mongoose ORM, MongoDB, MQTT

Highlights: Glove former yaw and pitch calculation using Infra-red proximity sensors, Real-time former indexing and angle data visualization, Former misalignment calculation simulation tool, Dynamic CSV and excel sheet document generation

REFERENCES

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