

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, 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

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- **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

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- **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, Fastify, Tailwind CSS, shadcn, Java ODBC Driver, 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

- **PCASSO - Pellet Counter and Analysis System for Statistical Observations**

**Clients:** Kaneka Corporation, UMPSA

**Role:** Full-stack developer

**Technologies:** Next.js, React, Node.js, Typescript, Javascript, Express, shadcn, Tailwind CSS, Zustand, Recharts, MQTT, Websocket, Prisma ORM, PostgreSQL

**Highlights:** Real-time image-based pellet counter and analysis, Dual-camera image streaming via websocket, Real-time camera-specific image data analysis, Dynamic CSV report generation

- **Fugen Legacy Landing Page**

**Clients:** Fugen Legacy

**Role:** Full-stack developer

**Technologies:** Next.js, React, Node.js, Typescript, Javascript, Express, shadcn, Tailwind CSS, Nodemailer, Zod

**Highlights:** Responsive and modern design, detailed company profile and vision showcase, SEO and performance optimization, dynamic content editing, Nodemailer integration for contact form automation, secure and scalable hosting infrastructure, mobile-friendly layout

## – 2022

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- **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, Nodemailer, SWR, NextAuth, 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, secure and scalable hosting infrastructure, 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

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## – 2021

- **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

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## REFERENCES

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