

William Gan HanSong

Recent Graduate - Former Software Engineer - AWS Certified Solutions Architect

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Profile Summary

- **Recent Graduate** with a **BSc in Information Technology**, achieving a **First Class Honours**.
- **Former Software Engineer** with a proven ability in **application development**, **troubleshooting**, and understanding of software and system architectures.
- Proficient in designing **scalable cloud architectures** and automating **cloud provisioning** using **Terraform (Infrastructure as Code)**, enabling robustness, operational and cost efficiency.

Personal Cloud Projects

Mock E-Commerce Cloud System (See Page 2)

- Designed a **high-availability and scalable** n-tier architecture using **AWS** services like **IAM Roles**, **Security Groups**, **Route 53**, **EC2**, **Launch Templates (Bash)**, **ALB**, **ASG**, **ACM**, **CloudFront**, **S3**, **Secrets Manager**.
- Established **CI/CD Pipelines** by integrating **AWS Connector for GitHub**, **AWS CodePipeline**, **AWS CodeBuild**, and **AWS CodeDeploy**, writing custom **AppSpec.yml** hook scripts to configure **deployment**.
- Leveraged **Terraform (Infrastructure as Code)** to **automate provisioning**, enabling **replicability and efficiency**.

Work Experience

NCS Group – Software Engineer (Left to pursue degree)

Aug 2021 – Oct 2022

- Enhanced the **data processing pipeline** by performing **code changes** to **Python** scripts.
- Identify **System Stability** issues by analyzing logs in **Microsoft Azure**.
- Fulfill **data extraction** requests by writing **SQL statements** for **Microsoft SQL Server**.
- Resolve **security vulnerabilities** by identifying, updating, and verifying related libraries.

Education

- **BSc in Information Technology, First Class Honours** – Teesside University
- **Diploma in Electrical and Electronics Engineering** – Republic Polytechnic

Grade Awarded in Feb 2025
Completed in May 2018

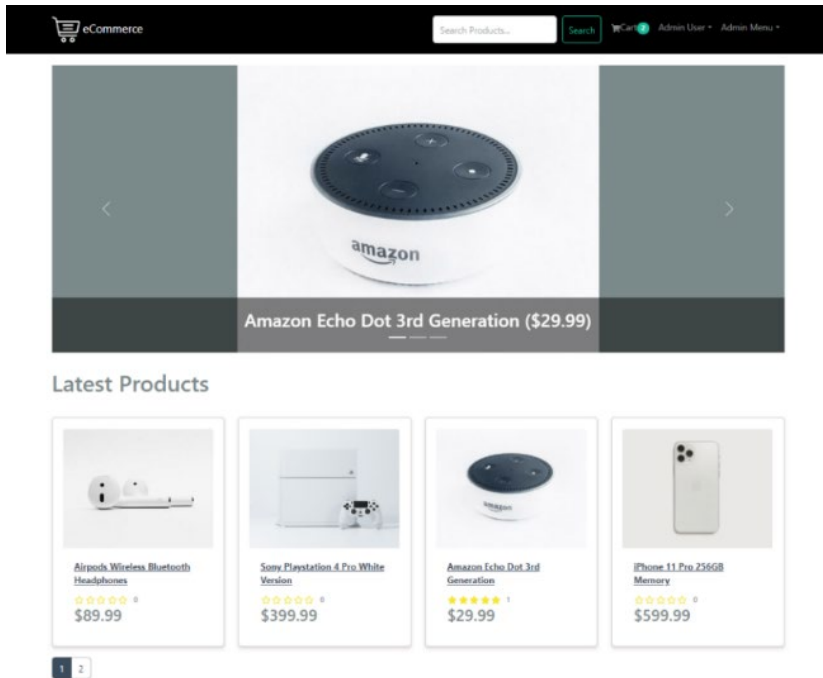
Certifications

- **IBM Applied DevOps Engineer** – Issued by **IBM** (Microservices & DevOps) **Work in Progress**
- **[AWS Solutions Architect Associate](#)** – Issued by **AWS** (System Architecture Design) **Acquired in May 2024**
- **[Meta Front-End Developer](#)** – Issued by **Meta** (JavaScript, ReactJS, UI/UX, Figma) **Acquired in Aug 2023**
- **[Google Data Analytics Professional](#)** – Issued by **Google** (SQL, R Programming, Tableau) **Acquired in Jun 2021**

Technical Skills

Development: ReactJS, Redux, Node.js, Express.js, MongoDB, SQL, NoSQL, JWT Auth
Programming: JavaScript (ES6), Python, HCL, PowerShell, YAML, Bash, JSON
Tools: AWS, Kubernetes, Docker, VMWare, NGINX, Terraform, Postman, Git/GitHub
General Concepts: Containerization, Orchestration (ECS/EKS), Auto-Scaling, Load Balancing, Infrastructure as Code (IaC), Scripting, Programming, Deployment, CI/CD Pipelines, DNS Management, Secrets Management, IAM.

Mock E-Commerce System (Personal Cloud Project)



Application Features & Design

- User Authentication & Authorization
- Cart and Checkout System
- Payment Gateway Integration
- Managing Listings and Orders
- Account Management Tools

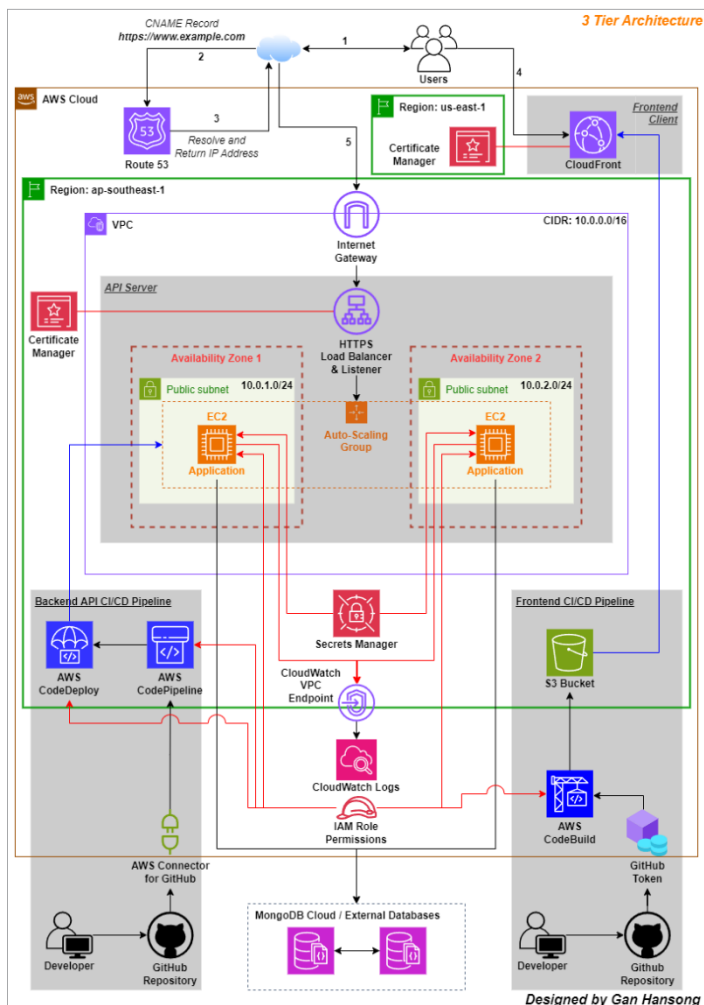
Frontend: Designed and implemented the user interface using React.js, styled with Bootstrap and manage state using Redux.

Backend: Developed APIs using Node.js and Express.js, secured with JWT-based authentication.

Technologies: React.js, Redux, Node.js, Express.js, Bootstrap, JWT Authentication, MongoDB, Cloudinary API.

GitHub: <https://github.com/hswg94/ecommerce-react-frontend>

GitHub: <https://github.com/hswg94/ecommerce-express-api>



Cloud Architecture Design

The application is deployed in a **scalable and high-availability** system leveraging **AWS Cloud services** and **Terraform (Infrastructure as Code)** tool.

Frontend Application: Hosted static assets on S3 with global distribution through CloudFront (CDN).

Frontend CI/CD Pipeline: Used AWS CodeBuild to detect changes from GitHub, pull the repository and build, and store in S3 bucket.

Backend Application: Used EC2 instances in Auto Scaling Groups behind a Load Balancer for scalability.

Backend CI/CD Pipeline: CodePipeline to detect changes on GitHub, trigger CodeDeploy to release new versions onto EC2 instances in the Auto Scaling Group with zero downtime using Blue/Green Deployment.

Services Used: Route 53, Certificate Manager, Secrets Manager, IAM, S3, CloudFront, CloudWatch Logs, VPC, IGW, Subnets, Route Tables, EC2, Load Balancer, Target Groups, Auto Scaling Groups, CodeBuild, CodePipeline, CodeDeploy.

GitHub: <https://github.com/hswg94/ecommerce-terraform>

Demo: <https://ecommerce.hswg94.com>