

Bin Hu

SENIOR SOFTWARE ENGINEER

60 Prosperous Way, Willetton WA 6164

☎ (+61) 425-575-418 | ✉ elithrade@gmail.com | 🏠 elithrade.com | 📱 elithrade | 📄 bin-hu-ab9035195

"Be the change that you want to see in the world."

Summary

Senior Software Engineer with over 18 years of hands-on experience across full-stack development, cloud infrastructure, and system integration. I specialize in building robust, scalable applications and automating deployment pipelines using modern DevOps tools and practices. A long-time Vim enthusiast, I enjoy working in terminal-based environments and continuously refine my toolchain to boost efficiency and focus.

I'm passionate about solving complex technical challenges and constantly exploring new technologies and development techniques. While my primary focus remains software engineering, I'm increasingly contributing to architectural discussions and system design, aiming to grow into broader technical leadership over time.

Skills

Back-end	GraphQL, Express, REST API, Serverless, EntityFramework, SQL, Non-SQL (DynamoDB)
Front-end	Next.js, React, Material UI, CSS
DevOps	GitHub Actions, AWS CDK, Docker, Terraform, Jenkins
Programming Languages	C#, TypeScript, Python, Go, Rust, C, Julia
Cloud - Azure	App Service, Container Apps, Functions, App Gateway, App Insights, APIM, AD (Entra ID)
Cloud - AWS	EC2, S3, RDS, Lambda, API Gateway, CloudFront, Elemental, DynamoDB, ECR, ECS, Fargate
Tools	Git, Neovim/Vim, Visual Studio, VSCode, Unity Editor
Methodology	Agile, Object-Oriented/Functional Programming, CI/CD, Unit testing for all languages
Languages	English, Mandarin

Education

UNSW(The University of New South Wales)

B.E. IN SOFTWARE ENGINEERING

- Achieved Honours Class 2 Division 2.

Sydney, NSW, Australia

Feb. 2002 - Dec. 2005

Work Experience

RACWA

SENIOR SOFTWARE ENGINEER

Perth, WA, Australia

April 2022 - Present

- Architected and delivered a low-latency (6s) real-time video streaming platform** for remote ROV seabed pipeline inspections, leveraging **AWS Elemental (MediaLive, MediaStore), CloudFront (signed cookies), React/Material UI, and a TypeScript/DynamoDB user management backend**. Spearheaded CI/CD automation via AWS CDK.
 - Engineered the complete user experience, developing the video streaming front-end (React, Material UI) and a full-stack administration system for client channel and user management.
 - Architected the core cloud infrastructure using AWS Elemental MediaLive and built a fully automated CI/CD deployment pipeline with AWS CDK, ensuring scalable and reliable delivery.
- Cloud & Full-Stack Development:** Architected and deployed a variety of scalable systems on AWS, including a data exchange for Uncrewed Surface Vessels (USVs) and a marine vessel reporting website. Leveraged a broad range of technologies including .NET Core, TypeScript, Docker, and AWS services (Lambda, ECS/Fargate, S3, DynamoDB).
- DevOps & Infrastructure Automation:** Established and maintained robust CI/CD pipelines across multiple projects using Jenkins and GitHub Actions. Championed Infrastructure as Code (IaC) with Terraform and CloudFormation to ensure rapid, reliable, and repeatable deployments.
- Data Processing & Machine Learning:** Contributed to a cloud-hosted Machine Learning system for the automated classification of multibeam sonar data. Streamlined and automated complex data processing workflows for vessel-based pipe inspections, significantly reducing manual effort.
- System Modernisation & Core Systems:** Led a team in refactoring monolithic applications into a Service-Oriented Architecture (SOA), enhancing scalability. Architected and maintained core modules for Fugro's next-generation global data acquisition software suite using .NET and WPF.
- Foundational Engineering:** Built a strong career foundation as a junior engineer, contributing to all aspects of the in-house survey software suite, including data acquisition, processing, and visualisation using C++, MFC, and C#.

Fugro Marine Australia

Perth, WA, Australia

SENIOR INNOVATION ENGINEER (PROMOTED FROM SOFTWARE ENGINEER)

June 2006 - March, 2022

- **Architected and delivered a low-latency (6s) real-time video streaming platform** for remote ROV seabed pipeline inspections, leveraging **AWS Elemental (MediaLive, MediaStore), CloudFront (signed cookies), React/Material UI, and a TypeScript/DynamoDB user management backend**. Spearheaded CI/CD automation via AWS CDK.
 - Engineered the complete user experience, developing the video streaming front-end (React, Material UI) and a full-stack administration system for client channel and user management.
 - Architected the core cloud infrastructure using AWS Elemental MediaLive and built a fully automated CI/CD deployment pipeline with AWS CDK, ensuring scalable and reliable delivery.
- **Cloud & Full-Stack Development:** Architected and deployed a variety of scalable systems on AWS, including a data exchange for Uncrewed Surface Vessels (USVs) and a marine vessel reporting website. Leveraged a broad range of technologies including .NET Core, TypeScript, Docker, and AWS services (Lambda, ECS/Fargate, S3, DynamoDB).
- **DevOps & Infrastructure Automation:** Established and maintained robust CI/CD pipelines across multiple projects using Jenkins and GitHub Actions. Championed Infrastructure as Code (IaC) with Terraform and CloudFormation to ensure rapid, reliable, and repeatable deployments.
- **Data Processing & Machine Learning:** Contributed to a cloud-hosted Machine Learning system for the automated classification of multibeam sonar data. Streamlined and automated complex data processing workflows for vessel-based pipe inspections, significantly reducing manual effort.
- **System Modernisation & Core Systems:** Led a team in refactoring monolithic applications into a Service-Oriented Architecture (SOA), enhancing scalability. Architected and maintained core modules for Fugro's next-generation global data acquisition software suite using .NET and WPF.
- **Foundational Engineering:** Built a strong career foundation as a junior engineer, contributing to all aspects of the in-house survey software suite, including data acquisition, processing, and visualisation using C++, MFC, and C#.

Presentation

Fugro Innovators Conference

Perth, WA, Australia

SECURE AND SCALABLE VIDEO STREAMING SOLUTION USING AWS ELEMENTAL

Oct. 2020

- Outlined the problems and challenges trying to solve.
- Introduced the core AWS Elemental services.
- Demonstrated how to use AWS console to setup Elemental services and starting streaming.
- Introduced securities concerns and how can we minimise them using CloudFront signed URL and signed cookies.