Brandon Li (Xinyi Li)

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Technical Skills

Programming Languages: Java, C#, Rust, JavaScript, Python
Front-end Development (Frameworks & Libraries): React, Vite, Bootstrap, Three.js
Back-end Development (Frameworks & APIs) Node.js/Express, .NET, RESTful APIs
Databases: MySQL, SQL Sever, MongoDB, MinIo, MariaDB
Cloud Platforms (AWS): AWS (S3, EC2, Cognito, Lambda, Beanstalk Pipeline, DynamoDB)
Development Tools: Git, GitHub, GitLab, Docker
Geographical Skills: ArcGIS Pro, CAD, Rhino3D & Grasshopper, Sketch Up, Autodesk Revit

Work Experience

Exaba.io **HIKO Hub, Hamilton, NZ**
Software Developer Intern Nov/2024 - Jan/2025
- Assigned to a solo project with occasional collaboration from team members, successfully set up, connected, and captured live RTSP streams from various network cameras, utilizing FFmpeg for real-time encoding and recording.
- Developed an intuitive user interface enabling concurrent input and simultaneous recording from multiple RTSP feed URLs; implemented multipart uploads with Rust's Tokio library to efficiently handle and concurrently upload large video files.
- Integrated MinIO object storage via Docker containers, optimizing file management by directly storing captured streams in memory-backed MinIO storage, eliminating local disk storage bottlenecks and enhancing overall system performance.

MilkTestNZ **Hamilton, NZ**
Inwards Goods/TRAW Technician(Fixed Term) Nov/2024 – April/2025
- As a TRAW technician, control and operate TRAW machine to crash vials, monitoring the PLC machine trouble shooting the system error managed the receipt, storage, and dispatch of goods at MilkTestNZ. Ensured accurate documentation, maintained clean and organized facilities, and adhered to safety protocols, including the use of personal protective equipment. Assisted in laboratory operations as required.

The University of Waikato **Department of Computer Science, UOW, NZ**
Cyber Security Research Assistant, Supervisor: Dr. Farzana Zahid May/2024 - Feb/2025
- Supervised by Dr. Farzana to evaluate the robustness of large language models (LLMs) against potential threats, focusing on vulnerabilities and attack vectors. Conducted comprehensive research on LLM security, analyzed potential risks, and the complexity of attacks.

Cube Architectural Design Co., Ltd **Wuhan, CN**
Architect Feb/2020 - Apr/2023
- Xianglong Xincheng Elementary School (Contract Awarded):Conducted solar analysis for optimal building placement using CAD and Arc GIS technologies. Utilized node programming such as Rhino, Grasshopper to develop multiple design proposals.

Projects

RTSP to Object Storage Nov/2024 - Feb/2025
Technologies: Rust — MinIO Object Storage — Docker — MinIO — VLC — FFmpeg — React + Vite
Developed a cross-platform RTSP client that captures live RTSP streams, processes them using Rust and FFmpeg, and stores them in Exaba MaxIO Object Storage. Designed a web-based viewer with React and Vite for efficient playback and management of recorded video streams.
Faced Challenges:
- Ensure configuring local cameras connected via an on-premise switch to capture RTSP streams without relying on network-based connections, manage large video file uploads efficiently with concurrency while preventing memory overload, and enhance the video viewer interface to support timestamp scrubbing and multi-feed playback.

Solutions:
- Multi-Camera RTSP Streaming: Integrated various network cameras, including Amcrest and Tapo models, ensuring reliable RTSP feed acquisition across different platforms. Conducted hardware testing and adapted stream handling for seamless compatibility.
- Large File Handling: Implemented multi-part upload functionality in Rust using MinIO to handle large video files effectively. Optimized concurrency with async/await mechanisms, preventing memory overload and ensuring stable high-throughput video storage.

- Video Viewer Interface: Developed a React-based HTML5 video viewer with automatic video listing and loading. Added advanced playback features, including timestamp scrubbing and multi-feed viewing, improving accessibility and usability.
- Docker image and container: Packaged the entire application using Docker, ensuring cross-platform compatibility and consistent execution across different environments.

Cloud Based Weather Dashboard Jul/2024 - Sep/2024
Technologies: AWS (EC2, Cognito, Elastic Beanstalk, CodePipeline, CodeBuild, CodeDeploy, DynamoDB, IAM) — Node.js — Express, Laravel — Open-Meteo API — Leaflet
Led the project team, managed the overall project process, delegated responsibilities, and ensured successful integration and deployment of the application.
- Faced challenges: High scalability and security.
- Resolution: Overcame these challenges by leveraging AWS services for cloud infrastructure, implementing CI/CD pipelines, and ensuring secure data transmission with Beanstalk and Code Pipeline.

Hotelier(Hotel Management System) Jul/2024 - Oct/2024
Technologies: C# — ASP.NET — SQL Server — Bootstrap — AWS (EC2, S3 Bucket)
Developed a comprehensive Hotel Management System to streamline hotel operations, manage room bookings, guest details, staff responsibilities, and financial transactions.
- Faced challenges: Data synchronization and user interface optimization.
- Resolution: Solved these issues by conducting user testing sessions, implementing real-time data updates, and refining the front-end design for enhanced user experience.

Analysis of Green Coverage in Auckland Using GIS May/2024 - Jun/2024
Technologies: GIS — ArcGIS — Spatial Autocorrelation Analysis — LiDAR — Auckland City Council Dataset
Led a team and worked in collaboration with the other group member to analyze green coverage in Auckland using GIS tools and datasets.
- Faced challenges: Seasonal variability in green canopy data and geographic data transformation complexities.
- Resolution: Addressed these challenges by using consistent data transformation to NZTM projection, and suggested multi-seasonal data collection for future studies.

Educational Background

The University of Waikato **GPA: 8.07/9(A)**
Master of Information Technology (First Class Honors) Nov 2023 - Feb 2025
Relevant Courses: Cyber Security, Programming Tools and Techniques, Programming Project, Secure Cloud Application Engineering, Applied Geographic Information Systems for Research and Planning, Programming for Industry, Programming with Web Technologies

South-Central Minzu University **GPA: 3.07/4(A-)**
Bachelor of Environmental Design Sept 2015 - Jun 2019
Relevant Courses: Design and Construction Management, Special Topic on Architectural Design, Building Environment Surveying and Mapping

References

Nick Humphries
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Lecturer in Department of Computer Science, University of Waikato
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Awards

- MInfoTech Study Award Applications (The University of Waikato), 2024
- Vice Chancellor's International Scholarship for China (The University of Waikato), 2023
- 2nd Place, 11th National College Computer Design Competition of China, Hangzhou, 2018