Alan Kochukalam George

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GitHub | Portfolio

FULL STACK DEVELOPER

Software Developer with 3+ years of experience in creating mobile and web applications. Proficient in React, React Native, TypeScript, and Node.js to build cross-platform, user-centric solutions. Skilled in architecting scalable backends and low-latency systems that exceed client expectations. Recognized for delivering innovative, data-driven solutions that delight end users.

EDUCATION

Memorial University of Newfoundland **Sep 2020 - Apr 2025**
Bachelor's in Engineering, Computer
- **Achievements:** Faculty of Engineering and Applied Science Dean's List 2020-21

WORK EXPERIENCE

Myovine **Jun 2024 - Jul 2025**
Co-Founder & Software/Firmware Lead *St. John's, NL*
Developed a physiotherapy compliance platform integrating IoT (ESP32 BLE sensors) with custom mobile and web components, enabling remote tracking of muscle activation and enhanced patient engagement through real-time feedback.
- Architected and implemented the firmware for ESP32, built a React Native mobile application, and constructed a Node.js/Redis backend to deliver seamless cross-platform programmatic experiences.
- Optimized signal processing by implementing constant-time DSP downsampling and filtering, reducing streaming latency by ~80%, and ensuring high-performance user interactions.
- Calibrated ADC scaling and reference offsets to exceed 90% voltage fidelity compared to baseline hardware, enhancing data accuracy for real-time diagnostics.
- Presented an end-to-end proof of concept at pitch competitions, effectively combining hardware (ESP32 BLE), mobile (React Native), and backend technologies (Node.js/Redis) to secure funding and media attention.

NotificationAPI **Sep 2024 - Dec 2024**
Web Developer *Remote*
Engineered a scalable notification service tailored for cross-platform messaging, streamlining the creation and delivery of user notifications with enhanced reliability.
- Revamped Docusaurus documentation and examples, reducing developer onboarding time by ~30% through clear and concise technical content.
- Optimized a React-based UI with Ant Design components, decreasing load times by ~15% and elevating the overall user experience on web applications.
- Expanded testing coverage and implemented systematic fixes, boosting API performance and reliability by ~20% while ensuring robust REST service integrations.

Tech Services, Memorial University of Newfoundland **Feb 2024 - Apr 2024**
Database Administrator and Software Developer *St. John's, NL*
Supports Memorial University's faculty, students, and researchers by delivering custom prototypes, databases, and specialized equipment that enhance research efficiency, data accuracy, and compliance with safety standards.
- Maintained fume-hood inspection DB, ensuring 100% compliance.
- Built an Arduino data-acquisition device, boosting measurement resolution/speed by ~40%.
- Automated reporting & print utilities, reducing manual effort by ~25%.

PROJECTS

React-gRPC Chat Application **Aug 2025**
- Engineered a low-latency chat application using gRPC streaming, reducing message delivery time to sub-100ms latency in testing.
- Crafted with React, Node.js (TypeScript), Redis, and containerized with Docker, ensuring 100% reproducible builds and deployment consistency.
- Integrated live user presence, avatar support, and Material-UI design, cutting average user navigation time by ~25% during usability testing.

Polyglot gRPC Calculator **Aug 2025**
- Architected a distributed calculator with gRPC microservices across Python, Java, C++, Rust, Go, Elixir, and Node.js, validating cross-language interoperability at scale.
- Implemented AST-based parsing with parallel evaluation, achieving a 2x throughput increase compared to sequential execution in benchmarks.
- Containerized with Docker for orchestration, demonstrating near-linear scalability and fault-tolerant execution across 6+ heterogeneous services.

SKILLS

- **Programming Languages**: C, C#, C++, Elixir, Go, Java, JavaScript, Python, Rust, TypeScript
- **Frameworks/Libraries**: CSS3, Cypress, Express.js, FastAPI, flask, GraphQL, gRPC, HTML5, Material UI, Next.js, Node.js, React, React Native (Expo), Redux, SCSS, Socket.IO, Spring Boot, Tailwind CSS,
- **Cloud/DevOps**: AWS (Cloud Practitioner Certified), Docker, Continuous Deployment, Continuous Integration, Git, GitHub Actions, Kubernetes, REST, Unit Testing
- **Systems/Embedded**: Arduino (ESP32), Bluetooth Low Energy (BLE), Digital Signal Processing (DSP), Embedded C
- **Database**: MongoDB, MySQL, PostgreSQL, Redis
- **Methods**: Data Structures & Algorithms, Multithreading, UML
- **Software Development Methodologies**: Agile, Scrum

CERTIFICATIONS

- **AWS Certified Cloud Practitioner:** Aug 2025 - Aug 2028
  Amazon Web Services Training and Certification

VOLUNTEERING & LEADERSHIP

Divine Mercy Transcription **Sep 2022 - Dec 2022**

Full-stack Web Developer

- Redesigned and modernized the company's website (divinemt.com) using HTML, SCSS, JavaScript, and back-end technology, PHP, resulting in a more visually appealing and user-friendly site.
- Improved Lighthouse Performance by +14 points and Accessibility by +10 points (desktop), confirmed by PageSpeed Insights; shipped HTML/SCSS/JS refactors and PHP routing fixes.
- Delivered a polished, production-ready site that elevated user experience and aligned with industry best practices.

PUBLICATIONS

- **SaltWire (The Telegram)**: How a soon-to-be-launched app will help physiotherapists remotely track muscle, nerve activity. Featured for overseeing the development of software and firmware for Myovine, an EMG-enabled system designed to improve remote physiotherapy monitoring and enhance patient engagement and treatment outcomes.
  Link: https://www.saltwire.com/newfoundland-labrador/mun-student-new-app