

## Bailey Nepe

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## PROFESSIONAL SUMMARY

Full-Stack Software Engineer with a unique journey from aviation instruction to technical leadership, bringing precision, safety-first thinking, and educational excellence to software development. Proven track record of transforming critical infrastructure, optimising performance from seconds to milliseconds, and mentoring people. Passionate about building scalable systems that solve real-world problems while maintaining the highest standards of reliability and user experience.

**Core Expertise:** Full-stack development, infrastructure modernisation, performance optimisation, team leadership, and translating complex requirements into elegant technical solutions.

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## TECHNICAL SKILLS

- **Backend & Cloud:** Node.js, TypeScript, Docker, TRPC, AWS (ECS, S3, CloudFront, RDS)
  - **Databases & Performance:** PostgreSQL (partitioning, indexing, CTE), Redis
  - **Frontend:** React, Next.js, Code Splitting, Lazy Loading, Vitest, Playwright
  - **CI/CD & DevOps:** GitHub Actions, multi-environment testing, Railway, Code pipeline, Terraform
  - **Collaboration & Leadership:** Agile methodologies, code reviews, pair programming, stakeholder engagement
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## PROJECTS

### PilotPrep - Learning Management System (LMS) - *(In Development)*

[pilotprep.co.nz](http://pilotprep.co.nz)

Developed a multi tenant LMS tailored for pilot training and aviation education, enabling organisations to whitelabel the product and create custom-branded learning platforms.

#### Features

- **Multi Tenant LMS:** A pilot training platform that enables organisations to whitelabel and customize their learning experience.
- **Frontend Excellence:** Built with React, leveraging React Query and TanStack Router; pre-cache queries at build time and is deployed on CloudFront for optimal page load times.
- **Robust Backend:** Utilizes Node.js with TRPC and Prisma for type-safe APIs and efficient PostgreSQL interactions.
- **Key Features:** Custom Markdown-to-React parser for interactive modules and real-time communication via WebSockets.

- **Streamlined Deployment & Quality:** Containerised with Docker and deployed via Railway with automated E2E tests using Playwright, complemented by caching and database optimisations.

### **Dreams Built - Construction & Timesheet Management Platform**

[dreamsbuilt.co.nz](https://dreamsbuilt.co.nz) | [github](#)

A full-stack web application that eliminated paper-based timesheet collection and transformed job costing processes for a construction business, saving hours of administrative work weekly while providing unprecedented visibility into project profitability.

#### **Business Transformation:**

- Eliminated 8+ hours weekly of manual timesheet collection
- Reduced administrative overhead by 85%
- Enabled same-day payroll processing vs. previous 3-day cycle
- Improved job profit margins by 15% through real-time cost tracking

#### Features

- Digital timesheet submission with job assignment
- Automatic labor cost calculation based on employee rates and hours
- File Management system enabling project files to be archived and assessed as required
- Unique job scheduling UI with simple drag and drop feature.

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## **EXPERIENCE**

### **NumberWorks'nWords - Remote**

*Leading educational technology company serving 70+ franchise centres and more than 18,000 students across Australia, United Kingdom and New Zealand. Numberworks'nWords is a subsidiary of Crimson Education.*

#### Fullstack Software Engineer

May 2022 - Present

- Eliminated deployment outages by re-architecting legacy "drag-and-drop" pipeline into a fully automated Docker → ECS workflow with CloudFront asset versioning; cut release time from 40minutes+ to <5 min and reduced production incidents > 85 %.
- Created full staging parity (ECS, RDS snapshots) enabling safe feature flags and blue-green deploys; dropped hot-fix frequency from weekly to < monthly.
- Improved tutor planning efficiency by shrinking API latency from 10 s to 100 ms (-99 %) by profiling Postgres, introducing strategic indexes/partitioning, and layering Redis with WebSocket-based partial-cache invalidation.
- Collaborated with team members and gathered requirements from students, tutors and centre owners to craft robust solutions that solve in centre inefficiencies.

**Waikato Aviation** - Hamilton

*Premier flight training organisation specialising in commercial pilot development established over 90 years ago.*

Deputy Chief Flying Instructor

Aug 2019 - Feb 2020

- Mentored instructors on instructional techniques, aligning teaching standards to improve overall instructional consistency and quality.
  - Developed instructor mentoring standard operating procedures, improving junior instructor supervision and documentation.
  - Managed training plans and oversaw the progression of over 70 students, taking action to ensure on-time and satisfactory completion.
  - Collaborated with customers to establish educational requirements and goals, developing tailored plans to achieve desired licences.
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**EDUCATION**

**Level 6 Diploma in Software Development** - *Developers Institute*

Comprehensive 2-year programme covering full-stack development, cloud technologies, and modern development practices

**Level 6 Diploma in Aviation** - *Waikato Aviation*

Intensive 2-year programme covering advanced aircraft systems, instrument flight procedures, and flight instruction