OSKAR FLOECK

Graduate Software Engineer

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Personal Statement

As a Computer Science graduate and business-outcome-focused technologist, I am motivated by the potential of technology to solve problems and make complex systems simpler, faster and more reliable for my end users. Through projects such as SchoolAir, an IoT air-quality monitoring platform, and Soma, my own static site generator focused on simplicity, speed and usability, I have developed a strong interest in software engineering and data-intensive systems. I am particularly drawn to organisations that would give me the opportunity to focus on doing things differently, building resilient systems and using technology to create better experiences for customers. Embarking on my career, I am keen to gain exposure to many different streams of established and emerging technologies which would let me build on my software engineering foundation while exploring adjacent areas such as AI and cloud.

Education

Bachelor of Computer Science — RMIT University Jan 2025 — Jul 2026
Bachelor of Arts — The University of Melbourne Jan 2023 — Dec 2024
Coursework in Linguistics & Ancient World History; transferred to RMIT.

Software Projects

Industry Project — IoT Air Quality Monitoring Platform (SchoolAir) Mar 2026 — Jul 2026
A full-stack IoT platform using Python, TypeScript and Express, allowing schools to monitor and act on air quality; now running 5 active stations across 5 countries, supporting 40 students and processing over 100,000 data points. See schoolair.org/en.

- **Leadership & delivery:** Project lead across a five-person team, planning sprints, coordinating team tasks and maintaining project documentation to keep development on schedule. Worked directly with the industry partner to translate ambiguous, high-level requirements into concrete API contracts and product behaviour, delivering features within sprint deadlines.
- **Embedded systems & offline reliability:** Built a Raspberry Pi data pipeline with an SQLite retry queue, scheduled batch recovery, on-device aggregation, and configurable transmission hours, preserving reliable air-quality data through outages and planned disconnects for student-health advocacy and trend research.
- **API & systems design:** Collaborated on a 48-endpoint REST API, PostgreSQL data models and auth controls for a multi-resource monitoring platform, and implemented server-side rate limiting and ingestion validation to protect the pipeline from malformed or excessive device traffic.
- **Testing & engineering:** Developed API tests and documentation using Bruno and Swagger, helping establish consistent interfaces and validate backend behaviour throughout development.

Independent Software Project — Static Site Generator (Soma) Jan 2026 — Present
Static site generator built from scratch in Odin, with my personal site maintained using Soma. See floeck.dev (demo) & github.com/osfloeck/soma (source).

- **Curiosity & learning:** Built Soma from first principles to deepen my understanding of templating systems, parsers and systems programming, continuously extending the project as I encountered new problems.
- **Systems engineering:** Designed and implemented a custom lexer, recursive-descent parser and AST-based template engine, including template inheritance and composable filters.
- **Simplicity & usability:** Built a focused CLI and local development workflow around init, build, serve and clean, with live reload to make authoring and iteration fast.
- **Ownership:** Designed and implemented the system end-to-end without a framework or runtime dependencies (apart from md4c), making deliberate trade-offs around architecture, dependencies and performance.

Experience

Library Concierge — RMIT University Jul 2025 — Present
Responsibilities

- Provide frontline technical support and triage more complex issues to specialist technical teams.
- Coordinate service requests and cross-campus communication daily using SharePoint and Teams.

Achievements

- Recognised by team leaders for triaging urgent requests and connecting students with the right specialist teams; trusted to support and train newer concierge staff.

Front of House/Barista — Independent Café Jan 2023 — Present
Responsibilities
- Run day-to-day operations, greet customers, personalise service and keep premises clean and tidy.
- Make coffees, often under pressure, to meet customer expectations.
- Train staff and manage team performance.

Achievements
- Maintained the café's positive customer experience during an ownership transition while some staff were uncertain about the changes.
- Built relationships with regular customers to increase patronage and was recognised as the reason they came into the café.

Library Assistant — University of Melbourne Jan 2024 — Dec 2024
Responsibilities
- Administered the Sierra library management system, maintained user accounts and circulation records, and assisted students with library computers and digital resources.
- Guided students with research inquiries, using knowledge of the Dewey Decimal system to help them locate relevant resources.

Achievements
- Invited by the Library Manager to represent the library at Open Day, leading a game-based activity to introduce prospective students and visitors to its services.

Venue Manager — Twice Shy Jan 2021 — Dec 2022
Responsibilities
- Trained new staff across a range of experience levels, including several in their first job.
- Coordinated front- and back-of-house rostering and managed logistics for corporate event bookings.

Achievements
- Configured and maintained POS systems and built a Raspberry Pi–based remote audio system for the venue. Both were developed around the business's bespoke needs and designed to be intuitive for staff, requiring minimal training.
- Managed supplier relationships and inventory through COVID-19 disruptions, negotiating pricing and availability under significant supply constraints.
- Optimised rostering using a custom tool, helping improve operating margins and giving the owner clearer insight into staffing needs and costs.
- Nurtured ongoing client relationships to grow the business's catering revenue.

Volunteering

Tutor/Mentor — Community Youth Non-Profit Mar 2025 — Present
Responsibilities
- Deliver weekly academic support to students from diverse educational backgrounds, ages and behavioural challenges.

Achievements
- Assessed each student's needs and adapted my approach to keep sessions engaging, leading to more students attending voluntary homework clubs.

Skills & Technologies

Languages Odin, C/C++, Python, Java, TypeScript
Web & Backend React, Next.js, Express, REST/GraphQL APIs
Data SQLite, PostgreSQL, MongoDB
Tools Git, Supabase, Docker, Bruno