Henry Russell

Software and Systems Engineer

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Summary

Software engineer at Zühlke since 2022, building web applications for banking, payments and retail clients. Experienced in TypeScript, React and Vue on the front end, with Python, Java and AWS on the back end. Native in agentic engineering, and developer and maintainer of Yomu, an advanced learning system for Japanese.

Skills

Languages: TypeScript, JavaScript, Python, Java, HTML, CSS, SQL

Front end: React, Next.js, Vue, Storybook, design systems, web components, Contentful, WCAG AA

Back end and cloud: Django, Node.js, Hono, AWS, Cloudflare Workers, Docker

Data and AI: SQL (Postgres, D1), semantic search, speech-to-text, LLM chat on AWS Bedrock

Testing and delivery: TDD, React Testing Library, Playwright, GitHub Actions, A/B testing (Adobe Target)

Agentic engineering: Codex, Claude Code, MCP, agent skills, agent rules (AGENTS.md), CI regression gates

Product: user feedback, product decisions, content modelling with editors, agile facilitation, teaching

Experience

Advanced Software Engineer

Jan 2024 – Present

Zühlke Engineering, London · Professional Software Engineer, Sep 2022 – Jan 2024

Barclaycard Payments · marketing site · barclaycardpayments.com

Next.js, React, TypeScript, Contentful, Storybook, Motion

- One of two engineers who delivered the Barclaycard Payments marketing site in three months.
- Created a shared, organisation-wide design system in Storybook to succeed the bank's existing one.
- Built more than 20 bespoke components from Figma designs, to the bank's standards and WCAG AA: hero variants, carousels, price cards, grids, a mega nav, breadcrumbs and accessible animations.
- Designed the Contentful content model with the content editors: one price type reused across the site, and a custom variant selector so one component covers many designs.
- When the Contentful licence did not arrive in time, shipped the site as a static build, using the trial CMS to load content and test how components fit together.

Co-op Funeralcare · digital products team · coop.co.uk/funeralcare

Vue, Python, Django, AWS, Contentful, Adobe Target

- Created the new "Find a funeral home" finder as its main engineer: address search, a Google Maps view and the API behind it, on desktop and mobile.
- The team built it in about three months during the code freeze that followed the 2025 Co-op cyber attack, as a standalone app so it could still ship.
- Built Vue micro-frontends, Contentful/Jinja templates and a shared component library with web component support, for customer journeys including Direct Cremation.
- Implemented A/B tests in Adobe Target, and contributed to Python/Django services, AWS and monitoring.
- Facilitated agile ceremonies and technical knowledge sharing in a team that regularly won Co-op's internal awards for its ways of working.

PostFinance · AI assistant prototype

Vue, TypeScript, AWS Bedrock

- Built the first chat interface for a mortgage assistant in a 10-day prototype, from the client team's designs: a lightweight Vue front end on AWS Bedrock that answers from the bank's own content.
- Focused on clean architecture and client extensibility, so the client team could carry it on.

Handelsbanken · mortgage application platform
React, TypeScript, React Testing Library, Java, TDD, SAFe

- Built mortgage fact-find journeys in React and TypeScript under strict technical constraints: no third-party libraries, a custom router, and forms that branch on the applicant's answers.
- Wrote reusable hooks for debounced autosave and a shared validation pattern used across the forms.
- Added server-side validation in Java 8 on Liberty to match the front-end rules, pairing across the stack.
- Practised TDD and pair programming, and collaborated closely with QA in a shift-left workflow.
- Integrated with internal banking systems for document generation and data services.

Zühlke Skill Hub · internal tool · zuehlke-skill-hub.pages.dev
Cloudflare, Microsoft Entra sign-in, coding agents

- After an AI workshop where management asked for a brand design skill, saw that the real gap was having no way to share agent skills, and built and deployed a catalogue for it in one day.
- Agents can search the catalogue and pick up the right skill for a task. Wrote the first skill from existing brand materials and used it to style the hub.

Computer Science Teacher (part-time) *2022 – 2024*
Academic Tutors Surrey · one-to-one A-level Computer Science tuition

Software Engineer Intern *Jun 2021 – Aug 2021*
Royal Holloway, University of London · lead developer of a module-selection web platform used by students

Computer Science Teaching Assistant *Sep 2020 – Jul 2021*
Royal Holloway, University of London · first-year programming labs and coursework marking

Projects

Yomu · yomureader.com
TypeScript, React, Hono, Cloudflare Workers and D1, Capacitor, MCP, Playwright · May 2026 – Present

- Developer, designer and product owner of an advanced learning system for Japanese, bringing all of a learner's study apps into one place and tracking their immersion.
- Shipped as a website, a browser extension, phone and desktop apps, and a plugin for ChatGPT and Claude.
- Built an instant pop-up dictionary for web pages, manga, PDFs and video, one review queue shared with Anki, JPDB, WaniKani, Bunpro and Jiten, and speech-to-text and search by meaning over a learner's own materials.
- Utilised coding agents (Codex and Claude Code) extensively to build features, verify changes and iterate on ideas, backed by automated checks and a regression test for every fix.
- Works closely with Yomu's users, turning their feedback into fixes and new features.

UserScript Compiler · github.com/HRussellZFAC023/UserScript-Compiler
React, Vite, Node.js · Aug 2025 – Jul 2026

- Developed an open-source web app, CLI and API that turn a userscript into a Manifest V3 extension for Chrome, Firefox and Safari, ready to publish on the store.
- Built it after making several userscripts for studying Japanese and for automations with AI, to deploy them quickly and easily and to speed up other people's development.

Education and certifications

MSc Software Systems Engineering
University College London (UCL) · 2021 – 2022 · Distinction
Research collaboration with Intel and Microsoft: developed a Visual Studio plugin for gesture-based, touchless interaction with the IDE, for developers with motor impairments.

BSc Computer Science (Software Engineering)
Royal Holloway, University of London · 2018 – 2021 · First-Class Honours (avg 80%)
Computer Science Prize for outstanding final-year project (2021). Best Second-Year Software Engineering Group Project (2020). Top academic performer (2019). Second-year team project: an asset management system in React, Flask and Postgres.
Certification: AWS Certified Solutions Architect – Associate (2024).

Interests

Japanese language study, chess and strategy games, psychology, photography.