Phillip Rees.

piprees.dev

Software Engineer & Product Designer—

Working with innovative brands to prototype, refine, and ship high-performance digital products to millions.

My career in fast-moving startups has given me an all-hands-on deck approach to product. I'm looking to join your growing team as an engineering lead where I can use my understanding of user experience, my love of development best practices, and my experience working with diverse teams to take on new technical challenges.

Key knowledge areas

- Full-Stack TypeScript & JavaScript frameworks including Next.js, Angular, React, and Express.
- Styling with CSS3+, SASS, and modern technologies like CSS Modules, CSS-in-JS, and Tailwind.
- Accessibility & performance auditing, observability, analytics, and SEO approaches.
- Designing APIs, authentication, and middleware with Node.js and Lambdas/Serverless functions.
- Developer tooling and build pipelines using CI tools, Webpack, Jest, Git, and shell scripts.
- Cross platform development techniques, debugging, optimisation, and maintaining legacy systems.
- Advocating for excellent user experiences, design consistency, and adherence to best practices.
- Project planning and continuous delivery using Agile and tools like Jira, Target Process, and Monday.

My experience as a technical lead

Within my first few months at the DVLA, I worked with senior team members across the Vehicles department to learn how the organisation makes use of AWS and the Serverless Framework. There I began to overhaul a B2B project which used AWS S3 file events to drive JavaScript lambdas as part of an AWS Step Functions state machine. I identified key issues with our tooling, implementing pre-commit checks to identify quality errors earlier in the cycle and then brought in type-checking through JSDoc annotations (which gave developers access to modern features like IntelliSense as a bonus. These quick wins helped to reduce wasted builds, led to several bugs being fixed, and improved the team's velocity.

I continued to increase confidence in the codebase by improving our code coverage, sharing my knowledge of testing best practices and how to write effective JavaScript. I helped the team to get moving, pairing up with developers and SDETs to review code which took pressure off the lead engineer. I then took the lead on investigating and migrating the app over to the AWS V3 API and updating other node dependencies to bring the project in-line with the rest of the DVLA's serverless projects.

I later investigated, planned, and co-ordinated work to bring several Ruby on Rails projects up to date, providing clear estimates and targets via stakeholder-friendly Confluence pages and splitting work up into actionable tasks for the team on Jira. For the first of these projects, I gathered insights from other DVLA apps and their engineers to simplify our codebase, make use of new patterns available through common libraries, modernise our Drone build and local development scripts, and contributed to the maintenance and redevelopment of the automated E2E test packs. Throughout this effort, I have opened up my process by holding catchups with the squad to discuss progress, share my insights, and scheduled work to reduce the risk from releases while ensuring continuous improvement.

Following this success, I co-ordinated the uplift of another Rails project, completing the upgrade process in a fraction of the time while setting a higher bar for quality. These improvements have resulted in a drastic reduction of Pager Duty alerts and out-of-hours support requests, with many underlying issues being fixed across our project backlog, and we now have a solid template for future Rails projects.

In addition to engineering and mentoring contributions, I have contributed clear documentation for our uplifted projects, writing and editing test process and developer onboarding guides which are much used and highly praised. The improved docs include multi-platform steps, workarounds for known issues, and have already helped reduce the setup time for several contractors and senior developers to a single morning of easy-to-follow instruction.

While at Planet Sport I led and co-ordinated remote teams of designers and engineers across a variety of projects. I turned project plans and design mock-ups into tasks for the development team based on executive priorities and gave instruction and feedback to the design team to improve the feasibility based on data availability. We hosted Laravel and WordPress APIs on Hetzner cloud and Digital Ocean droplets as well as Vue and Next.js sites which were split between Digital Ocean and Vercel. I helped the engineering team resolve issues with their cloud configurations to improve performance and made great use of Vercel serverless functions to bring APIs together, providing a more performant user experience and reduced costs by shortening round-trip times and caching data in their regional edge network.

At Tipstrr I made use of effective and low-cost solutions from Cloudflare and Vercel including routing, caching, and firewall products. I was able to harden our site security configuration and reduce the load on our servers from web crawlers, improve site performance for our users and helping us avoid burst fees on our database through cheap and practical infrastructure choices. I also maintained our front-end AWS Lightsail instances and our deployment processes, migrating from a Team City setup to a self-hosted GitHub actions system which (similar to Drone) kept the config within the codebase. I was able to remove our aging build servers altogether and further reduce our monthly overheads. I also experimented with on-the-fly image optimisation tooling offered by Bunny CDN and Cloudflare Workers to improve the client-side performance of our AWS S3 image hosting.

How I like to work

I value clear communication, creative problem-solving, empathic leadership, and productive teamwork.

I'm deeply passionate about the web and have grown my skills in software development through a combination of self-directed learning, collaboration with colleagues, and hands-on experience in real-world scenarios. While I thrive on fast-paced efforts like greenfield projects and prototypes, I also enjoy working on and improving established sites to resolve problematic issues and bugs.

Specialising in front-end development and the user experience, I have worked with varied and diverse teams on every part of the product lifecycle. I've been in the board room advising non-technical decision makers when product requirements have been ideated, have led working groups to plan and prototype new functionality and services, have co-ordinated in-person and remotely with analysts, designers, and developers to guide the delivery of full-stack, data-rich apps, and have brought projects to life by leaning into the knowledge of my teammates and peers.

I am always seeking to learn new things, experiment with new ways of working, and to help others learn. I enjoy putting together documentation, guides, and collected insights wherever possible, and am often taking notes and sketching diagrams during meetings and conversations to aid my knowledge-gathering process and to share with the team later. I enjoy hosting meetings, presenting on behalf of my team, and bringing people together to solve problems and co-ordinate work.

Alongside my hands-on engineering contributions, I love building lasting relationships with my peers, discussing design improvements and functionalities, reviewing code and design prototypes, and establishing best practices to help onboard new team members. I take pride in helping my team-mates succeed, and always make the effort to ensure their work is visible and their voices are heard.

Work Experience

Senior Software Engineer | Driver & Vehicle Licensing Agency — Sep 2023 – Current

Agile Software Development, AWS Lambda, AWS S3, Docker, Documentation, Drone, JavaScript, Ruby on Rails, SASS, Unit Testing

I work on high reliability products and secure services used by millions of public customers, private businesses, and international clients, many with sensitive data requirements and time-critical workflows. I develop solutions with full-stack JavaScript, Ruby on Rails, Docker, and make use of serverless step-functions on the AWS platform. I now also support critical services in production, triaging issues as part of the on-call engineering support team and ensuring our team's output is secure, tested, and audited to meet the high standards of the DVLA.

Here are some of the things I've achieved at the DVLA so far:

- **Improved legacy projects:** I have been recognised with an Exceptional Contribution Award for the work I have been doing to modernise and maintain several out-of-date services, tackling reliability problems with my team and pushing to adopt industry-wide practices such as type safety and code standardisation. Utilising the expertise of long-standing staff, we've upgraded core libraries and gems, solved compilation problems on newer deployment targets, implemented more robust automated checks of source code on commit, and ensured thorough unit testing coverage. So far this has led to a substantial decrease in on-call support tickets for our Rails projects, has led to several underlying bugs and issues being uncovered and fixed, and has improved the security, stability, and maintainability of our codebase.
- **Provided mentoring and support:** I support our lead developer and delivery manager by preparing project plans, work spikes, and documentation. I'm working on improving my mentoring skills by helping teammates through pair programming and code reviews, sharing modern best practices and innovative solutions, and ensuring our team meets our stakeholders' high standards.
- **Pushed for high quality:** I have supported my squad's ongoing efforts by documenting clear testing procedures and have worked with the SDETs to cover edge cases in our staging and test environments. I have made efforts to push back work for discussion with the business analysts when appropriate to ensure our applications maintain a high bar for quality. I have held reviews when working on large chunks of work to encourage buy-in from the squad and ensure everyone has the chance to discuss design implementations before they are finalised.
- **Contributed across squads:** I stay up to date with work across the organisation by joining in the regular cross-squad discussion groups, contributing with industry insights where I can, and sharing solutions to common pain points encountered by my squad. I have begun exploring how I can contribute to the development of our common libraries, recently working with other squads to implement changes required for the Crown logo change ahead of time which freed up senior resources and made the implementation painless for all Rails apps.

Lead UX Engineer | Planet Sport — Dec 2022 – Sep 2022

Auditing, Figma, GitHub Actions, Next.js, Node.js, Product Design, React, SASS, SEO, Tailwind, Team Leadership, TypeScript

I tackled product innovation at one of the UK's top sports journalism brands, focusing on creating high-quality web experiences and mobile applications with millions of users annually. I developed and managed the production of new features using a range of technologies, including Next.js, Angular, TypeScript, Node.js, and WordPress.

While in this role I managed team activities, conducted reviews, led meetings, and assigned tasks while keeping stakeholders engaged and up to date. I also ensured our work met high standards and provided guidance to established projects to ensure they met business needs. For front-end and infrastructure projects, I used services like Vercel, GitHub Actions, LightSail servers, AWS S3, and CloudFlare to streamline workflows, cut costs, and enhance the performance of our web apps and sites.

Post-acquisition, I worked hard at Planet Sport to ensure business continuity while taking on demanding new workloads:

- **Planet Sport Bet Promotional Sites:** In collaboration with the design team, I developed microsites for SEO and marketing, integrated with our bookmaker app to enhance its visibility and search rankings. We focused on user engagement through targeted promotions and offers. The sites were built using Next.js, with serverless functions to pull data from internal APIs for presenting promotions. This initiative resulted in a unified monorepo for future projects, sharing configuration, assets, and components, enabling our marketing team to swiftly deploy custom pages and gather insights independently.
- **Stripe Payments & Subscriptions:** Post-acquisition, I collaborated with the founder and backend team to switch Tipstrr's payment system from PayPal to Stripe. I crafted the user interface for recurring payments, focusing on clear error and success notifications, and enabling users to manage their subscriptions easily. This new system resulted in significant decreases in cancellations, payment disputes, and refund actions for the support team.
- **Performance and security auditing:** I conducted detailed audits of Planet Sport platforms to pinpoint performance bottlenecks, high-cost areas, SEO weaknesses, and UX improvement opportunities. To streamline this process, I created a repeatable testing plan, employing off-the-shelf automated tools like Chrome's UX Report, WebPageTest, Wave, and GTMetrix, complemented by manual testing for finer details using Chrome's Dev Tools to examine network requests and code execution. My efforts in rapidly addressing these issues led to cost savings and better search rankings for many Planet Sport properties.
- **Writing Research & Innovation grants:** During Tipstrr's acquisition period, I helped secure substantial funding for the company from UK government research and innovation grants. I compiled over a dozen detailed case studies and technical analyses, showcasing how our team successfully navigated challenging technical, experiential, and budgetary hurdles over several years. These successful grant acquisitions were a major achievement, enabling continued innovation and affirming the team's skills and efforts.

Senior Front-End Engineer | Tipstrr Sep 2020 – Nov 2022

Angular, Figma, GitHub Actions, Next.js, Node.js, Product Design, SASS, SEO, Tailwind, TypeScript, Web Performance

I led front-end development of this data-heavy real-time sports tipping platform, collaborating with leadership and power-users to design new features and prototypes, create back-office tools, and improve the product experience for thousands of users. I improved account management and checkout processes, brought stats and insights to life with intuitive designs, and boosted sign-up and partner click-through rates with engaging advertising techniques.

I embraced brand new web technologies and engineering architectures, gaining expertise in TypeScript, Angular, and Next.js. I enhanced platform performance and reduced operating costs by implementing bespoke solutions using edge functions, middleware, caching layers, and other backend-for-frontend techniques.

Innovation at Tipstrr happened in incremental sprints, but here are some of the significant projects:

- **Tipstrr Add-Tips Workflow Enhancement:** To improve the betting process on our platform, I led a redesign of our platform's betting process, drawing insights from our sports-betting staff and power users, and focusing on user-friendly design and efficient event discovery. By streamlining client-side data management and implementing a CloudFlare-backed caching system for our odds, I improved performance for thousands of users and saved costs on our primary servers by handling millions of monthly odds requests with no round-trip. Altogether this feature overhaul transformed the user experience and significantly boosted user engagement, quickly became the most-used section of Tipstrr.

- **Tipstrr Competitions App Revamp:** I replaced an outdated competitions feature with a flexible, Next.js-based white-label app, usable for both B2B and internal purposes. I oversaw everything from architecture to the design and implementation of front-end components and serverless data functions. Using TypeScript, React, and Tailwind, I created features including secure authentication, leaderboards, timetables, and a competition management dashboard. I integrated additional authentication options, including oAuth and a Web3 token system for NFT-based entries. Later enhancements included real-time odds, diverse scoring methods, a custom event results dashboard, and user-focused features like an avatar generator and personalized messaging. This app has had successful entries from thousands of users in various competitions over the last few years.
- **Tipstrr Alerts app:** I created a mobile app for Tipstrr using Flutter and Dart, enabling real-time push notifications on iOS and Android via Firebase Cloud Messaging. The app allowed users to sign up, manage their account, view their feed, and get instant notifications. Feedback from power users, gathered through TestFlight and Google Play beta releases, led to many app features being integrated into the main Tipstrr web app. The web app was later converted into a standard Progressive Web App (PWA) when Safari caught up to modern web standards, avoiding further costly app development while still giving power-users a great notifications experience.

Front-End Engineer | Cruise Nation Jul 2018 – Aug 2020

Backbone.js, Bitbucket Pipelines, CoffeeScript, JavaScript, Marketing, Adobe Photoshop, Product Design, SASS, SEO, Web Performance

I've designed and developed key features for an award-winning cruise travel e-commerce site. Building visually appealing and user-friendly checkout and marketing experiences, my work allowed Cruise Nation to retain an edge against well-funded competitors, winning Best Cruise Holiday Retailer at the 2019 British Travel Awards for the second year running.

In-between my UI work, I developed automations for end-to-end testing, built a staging preview system to give leadership a better way to sign-off on UI changes, and found innovative ways to improve the performance of our legacy platform and optimise the user experience for mobile users. These efforts dovetailed with my work to improve deployments processes and significantly automate repetitive tasks, saving valuable time for the web and digital team.

This is a selection of the high-impact projects that I led while at Cruise Nation:

- **Automated deployment processes:** Initially set up to help convert CoffeeScript into compiled JavaScript, I developed a Gulp and Browserify based workflow that enabled the use of SCSS, Pug, and many other convenient front-end technologies in production. This build process was eventually automated with BitBucket pipelines and converted to Webpack, deploying the resulting static files to the CDN. By incorporating backups and updates to the legacy system within the build process, I was able to implement advanced framework features like build-time pre-processing, hashed filenames, and modern JavaScript syntax with automatic polyfills. After automating what was an error-prone deployment process, I later implemented checks of key pages and site features using Cypress to ensure each deployment had gone smoothly.
- **Custom SPA framework:** I developed a custom JavaScript framework based on Backbone.js to modernize a legacy front-end platform. Inspired by early versions of Next.js and Angular, this framework enabled large pages to be segmented into smaller, more manageable components. It supported lazy loading of JavaScript, JSON, and SCSS, activating as users interact or when content updated, and included a data handling layer for on-demand loading and caching of extensive ship and regional descriptions, boosting performance. Additionally, I took advantage of the underlying platform's capabilities for A/B testing to provide live developer previews. Its continued use to the present day can be attributed to broad browser compatibility, great end-user experience, and developer-friendly design.

- **Cruise Nation checkout redesign:** I redeveloped the process using React within the established SPA framework. This approach allowed for the clear display of error states and created a predictable, testable user experience. To integrate with the underlying platform, I transformed proprietary template tag output into a JSON-like script available to the data-layer, a method similar to that used by many modern server-side rendering (SSR) solutions. The new checkout included various custom components, such as hotel and flight details, animated price calculators, and an interactive cruise itinerary map. This redesign effectively worked around the underlying platform's limits and resulted in more users checking out online.

Junior Front-End Engineer | Thinqi Aug 2015 – Jun 2018

Agile Software Development, Backbone.js, CoffeeScript, Graphic Design, Jenkins CI, Adobe Photoshop, SASS

I prototyped interactive content and designed graphics for high-engagement, fully interactive e-learning experiences used to train the staff of global brand names like Boots, Honda, and Mitsubishi. I then got involved with the core Thinqi web application and its related projects as a developer, joining the agile team and developing responsive, accessible components used by students, teachers, and administrators. I worked closely with product managers and designers to adapt to evolving business requirements and contribute to the specs for the RESTful APIs developed by backend developers, always ensuring a consistent, well-tested user experience.

These projects helped me grow as a designer and kicked-off my career in digital engineering:

- **Mitsubishi E-Bytes Courseware:** While not a strictly front-end web development project, the Mitsubishi E-Bytes project was still challenging from a technology perspective. Utilising the primitive scripting system in Articulate Storyline, I took care of implementing complex state-driven animations, quizzes, and interactive presentations designed to engage the learner and break the mould of stuffy, powerpoint-esque learning experiences, which resulted in being brought into the development team as a developer and Mitsubishi Japan complimenting the UK team on their exemplary e-learning.
- **Standardised E-learning design system:** I collaborated with the other graphic and senior instructional designers to develop a design system for rapidly building E-Learning products in Articulate Storyline, basing the design system on a mixture of Google's early Material Design Guidelines, Microsoft's Metro design system, in-house pedagogical theory, and user experience research from past products. The result was a shareable design document and accompanying Storybook file, including a library of fully interactive quiz components, UI elements, and composed pages which could be styled quickly to match a specific brand's identity. Using the system, the team decreased the number of designers needed for each project and still reduced the time taken to deliver exceptional learning experiences from several months to just a couple of weeks.
- **Thinqi Search Component:** Based on UX team designs, I headed up development of a new search component that would be used across all Thinqi powered sites. The search was built around the idea of filters-as-tags, allowing learners to quickly build up and change complex search queries which fetched results from .NET APIs. Built in CoffeeScript, jQuery, and Backbone, the experience taught me a lot about object-oriented programming techniques and required a lot of communication with the UX and senior development team to accomplish.