

David Thomason

SOFTWARE ENGINEER

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Experience

Invisible Technologies Senior Software Engineer	2025 – Present
<ul style="list-style-type: none">• <i>React, Typescript, Next.js, FastAPI, Python, Kubernetes, Helm, GCP, Databricks</i>• Created BI dashboard compiler<ul style="list-style-type: none">• Reverse-engineered a data warehouse visualization tool with interactive filters, widgets, charts• Created an application that compiles and renders dashboard content into a custom interface, providing enhanced UI/UX for customers• Built new ontology page for helping customers understand their data model<ul style="list-style-type: none">• Created API to query customer data dictionary, categories, and entity relationship diagram• Rendered API results in UI with an interactive graph representing entity relationships	
SpaceX Software Engineer	2022 – 2024
<ul style="list-style-type: none">• <i>Angular, Typescript, .NET, Python, PostgreSQL, Kubernetes, Helm, Kafka, Azure, Terraform</i>• Graph Database Application for Design & Manufacturing Data<ul style="list-style-type: none">• Solved challenges of tracking frequent design changes and build discrepancies for complex rocket hardware by replacing a slow, query-complex legacy ERP system.• Developed a graph database solution with Kafka streaming for real-time data analysis, enabling fast data traversals and improved scalability.• Engineered 'As-Built' data traversal to capture current manufacturing status using physical part data (e.g., serial numbers).• In collaboration with Build Engineers, designed and implemented reconciliation logic to match design specifications with actual built components, identifying missing or inconsistent elements.• Built a reusable C# framework for consuming Kafka messages and populating graph data, accelerating the integration of many data types.• Delivered a system capable of answering critical queries, such as "Find all instances of part X in assembly Y" and "Find mismatches between design & build".• Gantt Chart Scheduling System for Test & Launch Operations<ul style="list-style-type: none">• Addressed managing of complex rocket test schedules, which were previously handled with static excel files, and involved critical time constraints and numerous event dependencies.• Developed a dynamic scheduling application to create events, define dependencies between them, and automatically propagate any schedule adjustments to downstream activities.• Focused on the dependency management aspect, including UI work for visualizing event relationships and backend logic for storing these relationships and correctly rescheduling downstream events using topological sorting.• Integrated streaming of work order and operation data from the ERP system to provide real-time data for the scheduling application.• Led design & development of a property management system<ul style="list-style-type: none">• Designed, built & deployed system from the ground up• In-house system to track the construction, waitlist, and leases for on-site housing• Implemented multi-stage waitlist review/approval process	

- Site Information & Map Mobile App
 - Led the ground-up design and development of a "Google Maps for SpaceX" equivalent web and mobile application, serving as a central information hub for employees, their families, and third-party partners at the Starbase facility.
 - Architected a flexible system utilizing a headless CMS; designed distinct data handling strategies for less-sensitive public information and sensitive internal data, replicating data out to the network for enhanced security.
 - Implemented the solution on a public cloud leveraging Terraform for infrastructure, an API gateway, a Kubernetes cluster, object storage for assets, and SSO authentication.
 - The successfully rolled-out system comprised a client application (Angular), a headless CMS with an authentication guard, object storage for assets like images and files, and an API connected to a relational database.
- Improved system used for tracking risk tickets across rocket hardware
- Maintained and updated supply chain management system

Nylas | Software Engineer 2021 – 2022

- Python, MySQL, AWS, GoLang, Kubernetes, Google Cloud, Redis, Temporal, Pub/Sub
- Led integration of legacy & new systems for email, calendar APIs

IBM | Software Engineer 2013 – 2021

- Node.js, PostgreSQL, Jest, Kubernetes, Python, Pandas, SciKit Learn, R Shiny, D3
- Developed APIs for new "Actions" chatbot framework
- Redesigned E2E Testing Framework
- Refactored system dependency status framework

Independent Projects

Startracker (GitHub: [Startracker](#))

- Interactive 3D satellite tracker with AI insights using LLM and Retrieval Augmented Generation
- React, Next.js, three.js, IndexedDB, Python, FastAPI, Langchain, Gemini, Docker, GitHub Actions

HeroChat (GitHub: [dtom90/HeroChat](#))

- Chat with Historical Figures via AI text or voice (Speech-to-text, LLM, Text-to-Speech)
- React Native, Typescript, Node.js, Websockets, Server-Sent Events, Gemini, Docker, Google Cloud

Pomodash (GitHub: [dtom90/Pomodash](#))

- Task management web/desktop app with pomodoro timer and activity tracking/visualization
- Vue.js, Vuex, Bootstrap, Electron, Jest, Cypress, Docker, CircleCI

Education

Cornell University, MEng Computer Science 2013

Cornell University, BS Electrical and Computer Engineering 2012