

Sean Paul Robertson

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Web-focused full-stack engineer with AI research experience

Experience

Lead Engineer and Architect, Nuve Platform Chicago IL, 2021 - 2025

- Led end-to-end development of a cloud platform for one-click SAP server deployment
- Designed and built a monitoring and automation framework to manage SAP instances across multiple cloud providers and on-premise environments
- Mentored development team, ensuring best practices in code quality, system design, and CI/CD use

Co-Founder and Lead Engineer, Prontotype San Francisco, CA, 2011 - 2021

- Co-founded and operated a software agency specializing in rapid full-stack web and mobile development
- Involved with every aspect of the project cycle, from sales to design to implementation to deployment
- Grew from serving small teams of entrepreneurs to full companies and corporations around the world, including:
 - **ManpowerGroup** – Workforce Assessment Suite Milwaukee WI, 2017 - 2021
 - * Suite of web-based assessments for potential hires, aggregating data across a range of personality traits
 - * Admin tool for managers to visualize data and filter applicants based on measured traits
 - **Applied Technology Council** – Structural Hazards Search Tool Redwood City CA, 2016 - 2020
 - * Mapping tool integrating data from the ASCE reference manuals to provide structural engineers with location-based hazard information, such as wind speed, snow load, tornado risk, and seismic activity
 - * Supported 50k MAU with a polyglot Somata microservices architecture (see below)
 - **Winsborough Limited** – Psychological Assessment Platform Auckland NZ, 2017 - 2019
 - * Web-based platform for developing assessments based on internal psychology research
 - * Internal dashboard for insights into assessment results across companies
 - **Level Solar** – Solar Sales Software Suite Long Island NY, 2012 - 2017
 - * Sales & Canvassing App (iOS/Android) – React Native frontend with Node.js backend, Salesforce integration, MongoDB, Redis; tracked over 2.5 million customer interactions
 - * Management Dashboard (Web) – React frontend, Node.js backend; real-time metrics on geolocation, canvassing efficiency, and conversion rates, enabling data-driven training and territory analysis
 - * Energy monitoring App (iOS/Android) – React Native and Node.js backend; provided real-time access to solar panel energy production data from a smart energy monitor
 - * Developed a novel (pre-Expo) solution for deploying on-demand updates to React Native apps, bypassing lengthy app store approval processes
- Built several internal tools to optimize development and collaboration, including:
 - **Somata** – Microservices framework github.com/somata
 - * Framework for building networked microservices, supporting RPC and pub-sub communication models
 - * Created libraries for Python, Node.js, Lua, and Go to support polyglot service meshes
 - * Common interface over multiple messaging transports including ZeroMQ, HTTP, Websockets, and GRPC
 - **Nexus** – Team collaboration hub
 - * Centralized hub for team chat, task management, and real time metrics
 - * Handled millions of events from client projects and external services with a custom MongoDB based ORM

Education

Massachusetts Institute of Technology

2008 – 2012

- Candidate for BS in Computer Science and Engineering and Brain and Cognitive Sciences
- Worked under Tim Berners-Lee to develop a browser extension to interpret and display semantic web data

Selected Personal Projects

RARNN – Recursive Application of Recurrent Neural Networks

github.com/spro/rarnn

- Extended seq2seq+attention model to a novel recursive architecture to parse complex intent hierarchies
- Built a DSL to generate a large amount of synthetic training data from a small amount of intents and objects
- Deployed model as an Alexa-style assistant, handling complex home-automation tasks such as multiple parallel intents and conditional requests

Practical PyTorch – PyTorch tutorial series

github.com/spro/practical-pytorch

- Series of tutorials for PyTorch focused on NLP tasks such as text classification, generation, and translation using RNNs and Sequence to Sequence models
- Designed simple models that could be trained on a personal computer while still achieving interesting results
- After achieving popularity on GitHub these were adopted as the first official PyTorch NLP tutorials

Skills & Keywords

High level

- Building full-stack web and mobile applications
- Designing and implementing intuitive user interfaces
- Translating ambiguous requirements into actionable specifications
- Managing and automating deployments in the cloud and on premise
- Practical integration of AI & LLM tools

Programming Languages

- TypeScript/JavaScript, Python, Go, Swift, Bash, Lua, Java, PHP, C (AVR embedded), Crystal

Frameworks & Libraries

- React, Svelte, Vue, Node.js, Next.js, React Native, FastAPI, Pandas
- LangChain, LangGraph, PydanticAI, CrewAI

Tools & Platforms

- Docker, Kubernetes, Terraform, GitHub Actions, Linux
- AWS, GCP, Azure, Digital Ocean

Databases

- Postgres, MySQL, MongoDB, EdgeDB, Redis, ElasticSearch
- Relational, NoSQL, KV, and graph schema design