Neil Hendren

Versatile Fullstack Software Engineer | Chemical/Bio Engineer | TypeScript | Ruby | Python

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Summary

Ambitious Software Engineer blending expertise in website design, database management, server design, and academic research to pioneer modern engineering solutions. Leveraging skills in JavaScript/TypeScript, Ruby on Rails, SQL, Python, and a suite of other programming languages and frameworks, I am committed to driving future advancements in technology through continuous learning and collaboration with subject matter experts.

Professional Experience

Software Engineer III (Full-stack) @ Cobank   Denver, CO
06/2025 - Present
- Build full-stack applications used by CoBank customers to pay bills, view investments, loans, and leases
- Design user interfaces for the customer portal, using a Material UI-based React components library
- Build APIs to access user data, financial information, change preferences, and perform CRUD operations
- Deploy applications to development, test, and production environments using scalable workflows
- Utilize scrum and Agile methodology within the Scaled Agile Framework (SAFe)
- Work closely with product team to ensure features are in compliance with company goals and directives
- **TypeScript, Express.ts, React.ts, Python, FastAPI, AWS, Terraform, Kubernetes, Docker, GH Actions, Splunk, ArgoCD**
- **Vitest, Playwright, Pytest, Swagger Docs, Axios, SCSS, Material UI**

Full-Stack Software Engineer @ University of Colorado Boulder   Boulder, CO
04/2018 - 06/2025
- Served as a tech lead and advisor to a team of engineers, managing the central repositories and doing PR reviews
- Designed virtual laboratories platform that uses REST APIs with CRUD functionality to track student progress
- Built more than 50 scientific simulations used for engineering education (JavaScript, Python, Matlab, and Mathematica)
- Designed 1200+ page educational website in collaboration with chemical engineering research professor
- **Node.js, PostgreSQL, Python, Django, HTML5, CSS, Heroku, AWS EB, WordPress**

Project Consultant and DevOps Engineer @ Darkmeow Productions   Boulder, CO
03/2025 - Present
- Building a social media app designed to compete with major players in its market sector
- Currently providing advisory work on writing tests (**Cypress, Jest**), cybersecurity, API design, and cloud services
- Deployed Node.js API to AWS EC2 instances using Elastic Beanstalk
- Migrated MongoDB database from MongoDB Atlas to AWS DocumentDB
- Designing continuous integration and deployment using GitHub actions
- **React.js, Node.js, AWS DocumentDB, AWS EC2, AWS S3, AWS Elastic Beanstalk, GitHub Actions**

Backend Software Engineer @ ThxRex   Boulder, CO
01/2025 - 04/2025
- Developed a restaurant recommendation engine to be used by travel agents and concierges
- Implemented testing, logging, prompt engineering, and dynamic content loading
- Debugged and fixed any broken functionality in the production environment
- **Ruby on Rails, RSpec, Docker, HotWire, Google Places API, OpenAI API, Heroku**

Laboratory Coordinator @ University of Colorado Boulder   Boulder, CO
06/2021 - 12/2021
- Designed and built durable chemical engineering experiments for undergraduate lab classes

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Engineering Intern @ Osypka Medtec Inc.   Longmont, CO
11/2017 - 03/2018
- Provide technical assistance for engineering of Class II and Class III medical devices

Research Intern @ Lawrence Berkeley National Laboratory   Berkeley, CA
09/2014 - 12/2014
- Proposed minimal-impact methods of growing biofuel crops in California using watershed modeling framework

Select Projects

LearnChemE.com | Deployed Application | Private Repository
Tech: PHP | WordPress | HTML5 | CSS | Google Scripts

An engineering education website containing screencasts, simulations, virtual labs, and resources for students and instructors
- WordPress page templates were programmatically generated from a large set of metadata with Google Scripts
- Custom WordPress themes were designed to allow non-technical contributors to aid in maintenance of the website

MakeAIArgue.com | Deployed Application | Private Repository
Tech: TypeScript | React.ts | Express.ts | LLM APIs | Vite+Netlify | Heroku

A website to make two different LLM models (e.g. ChatGPT 4o-mini vs. Claude Sonnet 3.5) argue over controversial topics
- Custom prompts were injected on the back-end to instruct models to create humorous arguments over absurd subjects
- Text-to-speech was implemented using the Talkify API, with different (somewhat) realistic-sounding voices for each model

Catalytic Reactor Virtual Laboratory | Deployed Application | Private Repository
Tech: Express.js | PostgreSQL | Heroku

Graduate-level online laboratory simulation to characterize chemical reaction kinetics by nonlinear regression
- Utilized Node.js to verify credentials, record student progress, and provide administrative privilege to instructors
- REST API was designed with CRUD functionality to record and track measurements made within the laboratory UI

LearnChemE Front-End Simulations | Deployed Application | GitHub Repository
Tech: HTML5 | CSS | JavaScript | Bootstrap | Node.js | Webpack | Responsive Design

Collection of embeddable scientific simulations used in the instruction of engineering topics
- Our front-end simulations explore topics such as vapor-liquid-liquid equilibrium, distillation column design, chemical reaction kinetics, quantum physics, and other subject matters encountered by undergraduate engineering students

RuneFall | Deployed Application | GitHub Repository
Tech: React | Ruby on Rails | PostgreSQL | Test-Driven Development (TDD) | CI/CD | GitHub Actions | RSpec | Cypress

A search engine for playing cards used in the game Runeterra
- Designed a responsive frontend and RESTful backend using Ruby on Rails in an Agile, paired programming environment

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Technical Skills

Programming Languages	TypeScript | Ruby | JavaScript | Python | PHP | SQL | MATLAB | Mathematica
Front-end & UI	HTML5 & CSS3 | Bootstrap | React.js | React Router | Hotwire | Webpack | Material UI | SCSS
Back-end & Frameworks	Ruby on Rails | Django | Express | Node | RESTful API design | CRUD services
Databases & Data Stores	PostgreSQL | MongoDB | AWS S3 | AWS DocumentDB
DevOps & Deployment	AWS Elastic Beanstalk | EC2 | Heroku | GitHub Actions | Terraform | Docker | Kubernetes
Testing & Quality	RSpec (Ruby) | Test-Driven Development (TDD) | Cypress.js | Playwright | Vitest | Jest | Pytest
Collaboration & Leadership	Repository Management | PR Reviews | Paired-Programming | Scaled Agile Framework (SAFe)

Education (formal)

Accredited Certificate in Backend Engineering   08/2024
Turing School of Software and Design

B.S. Chemical and Biological Engineering   05/2017
University of Colorado, Boulder

Education (online coursework)

React - The Complete Guide 2025 (incl. Next.js, Redux)   06/2025
Udemy

React Advanced Concepts: Re-rendering, Performance & More   06/2025
Udemy

GitHub Actions: The Complete Guide from Beginner to Expert   05/2025
Udemy

AWS Trailhead: 03/2025
AWS Cloud Basics | Core AWS Services | Application Deployment and Monitoring | Cloud Security
Pricing and Support | Cloud Acquisition | AWS Cloud Practitioner Certification Prep

The Complete Python Bootcamp from Zero to Hero in Python   01/2020
Udemy

Publications

Falconer, J. L., & Hendren, N. (2021). Virtual Catalytic Reactor Laboratory. *Chemical Engineering Education*, *55*(3), 183-188.