RICHARD DIDHAM

Senior Software Engineer

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Los Angeles

I am an experienced full-stack developer with an academic background in numerical methods and mechanical engineering. I'm interested in leveraging my expertise in these areas to tackle complex, data-intensive problems in software development.

WORK EXPERIENCE

Senior Full-Stack Developer

Boeing Research and Technology | Sept 2022 - Present

Led development of a multi-tenant, cloud-based platform and InnerSource code base which allows teams to rapidly build and deploy web apps to store engineering data.

- **Core tech stack:** Django, PostgreSQL, S3 Storage, Boostrap, DataTables, Gitlab CI/CD, Docker, Openshift
- Fully functioning web apps and APIs are generated dynamically from a simple definition of the needed data schema
- Allows new teams can go from zero to a deployed production application in a matter of hours
- To date 16 applications have been deployed, serving 200+ users across a variety of engineering disciplines
- Promoted strong documentation practices which has allowed teams to develop and deploy apps without needing a single meeting with maintainers
- Led a team of 3 developers: ran daily standups, managed task board, coordinated with customers
- Presented novel aspects of the project at BTEC, an annual internal conference which highlights technology developed within Boeing (< 30% of submissions are accepted)

Full-Stack Developer

Boeing Research and Technology | July 2021 – Sept 2022

Contributed to a desktop C# application which automates repetitive test planning and engineering tasks.

- **Core tech stack:** .Net Core, React, Material UI, Node.js, Gitlab CI/CD, VMware Tanzu, SQL Server
- Developed an admin web UI and accompanying REST backend for better access to the desktop app's SQL database
- Built CI/CD pipelines to deploy both the admin UI and REST backend to Tanzu cloud platform
- Implemented major overhauls to reduce latency and eliminate race conditions in the desktop app

Structures Research Engineer

Boeing Research and Technology | July 2019 – July 2021

- Developed Python tools to process results from Finite Element Analysis (FEA) simulations

- Conducted various static and dynamic non-linear FEA simulations
- Developed a Python library which converted between FEA element strains and node displacements for a machine learning project using graph neural networks to predict structural vibration

PROJECTS

Sail Scan

Open Source

Computer vision application which uses color based image thresholding to analyze sail shape on high performance sailboats.

- **Core Tech Stack:** Core tech stack: OpenCV, Python multiprocessing, Tkinter, pytest
- Allows sailors to better characterize their setup and quantitatively assess changes to sail shape
- Beta version in use by professional sailors
- Optimized for performance: processes 7,000 5MB images in 30 minutes on a typical notebook
- MVP architecture with comprehensive test coverage

SKILLS

Languages and Frameworks

Python, JavaScript, C#, Java, SQL

Django, React, .Net Core, Boostrap, Material UI, DataTables

DevOps

Docker Containers, Kubernetes, Openshift

Gitlab CI/CD, VMware Tanzu, Github Actions

Web Security

Token authentication

Session authentication

Professional

Full-stack development

Technical leadership

InnerSource maintenance

EDUCATION

MSc in Computational Mechanics
University of California, Berkeley
2018 - 2019

BSc in Mechanical Engineering
University of California,

Berkeley
2014 - 2018

INTERESTS

Sailing

Boat building

Cycling

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