

John Kealy

PERSONAL PROFILE

With over a decade of experience programming in the academic and corporate sectors, I use code to solve real problems. Early in my career, my programming supported my scientific research; but in recent years, I've been dedicated to software engineering and the World Wide Web. I intend to shift my focus to Frontend technologies now - I think they have a bright future.

WORK HISTORY

Frontend Developer (Contract) Ikius Ltd, Remote Oct 2022-Present

- Client-facing maintenance and development of static websites across multiple projects, using NextJS (React), NuxtJS (Vue), Tailwind CSS, DatoCMS, Contentful and other tools.

Software Engineer (Contract) Carbon Space Tech, Remote Apr 2022-Aug 2022

- Key member of the engineering team at a new startup, creating the next generation of atmospheric greenhouse-gas emission monitoring tools based on satellite data.
- Spear-headed the evolution of the software infrastructure, by designing and implementing a whole new pytest unit-test suite, optimising the FastAPI-based API to respond 6x faster, and writing scientific code for the event-based data processing pipeline (using AWS DynamoDB, Lambda, API-Gateway, Docker, Python, Linux...)

Software Engineer (Contract) Overloop Ltd, Remote Jun 2021-Mar 2022

- Worked with our client in the real-estate industry as part of an Agile team, tasked with the integration of complex third-party APIs.
- Collaborated closely with project managers and colleagues to produce maintainable, well-documented, and well-tested code, primarily with Django, PostgreSQL, and Docker.
- Took a leading role in the development of a new strategy to address tech debt during a period of rapid scaling of the company, by implementing an event-driven microservice for publishing messages via FastAPI and Amazon's SQS service.

Associate Full Stack Developer Propylon Ltd, Dublin, Ireland Aug 2020-Feb 2021

- Worked as part of a cross-functional Agile team of software engineers on the development and continuous deployment of a bespoke suite of legislative software for the US state Senate.

Meteorologist & Scientist The Met Office, Exeter/Aberdeen, UK 2013-2016

- Use of Python to analyse large datasets of cloud data from satellites over the Sahara Desert, with the results published in a leading peer-reviewed scientific journal.
- Conveyed weather information to clients in the aviation and commercial sectors using the latest techniques in computational and practical weather prediction.

EDUCATION

PhD, Dept. of Mathematics University of Exeter, UK 2016-2020

- Developed, implemented, analyzed, and published improvements to state-of-the-art weather models in a high-performance computing environment, using Fortran, Python, Linux, and many other technologies.

- Managed a small remote team as chief editor of yourweather.co.uk, acquiring 500-1000 readers for each of our daily articles about weather, astronomy, and the environment.
- Completed a Master's in atmospheric science, graduating with first-class honours at the top of my class.

PROJECTS

Please visit johnkealy.com/projects to see the web applications and code from all of my personal project work. Here are some highlights:

- Independently created the MVP for a new IoT-based startup, along with the non-technical founder, working with Django, Vue.js, and all stages of the software development lifecycle such as server configuration, security, CI/CD, DNS, SSL, and testing.
- Nominated as a 'core' contributor for Windy.com, a site that receives close to 1m visitors every day. My code solves atmospheric thermodynamic equations using vanilla Javascript, plots and animates the data in D3.js, and reads from a Python Rest API that I created, which receives upwards of 10,000 requests per month. The plugin is used by pilots, balloonists, and meteorologists around the world.
- Developed an open-source framework for quickly and painlessly prototyping Django + Vue.js web applications. Includes an out-of-the-box production environment (Docker, CaddyServer), server setup (Bash), authentication (Django + Vue JWT), and infrastructure tools (Vagrant, Makefile, Github Actions).
- After I identified a security issue (proper storage of JWT tokens on the client) with the design of other authorization libraries for Vue.js, I wrote an open-source plugin to address this concern. It includes a simplified and easy-to-use implementation for authorized state management using Vuex.

LANGUAGES & TECHNOLOGIES

Python

FastAPI | Django | django-rest-framework
Flask | Scipy | Matplotlib | Numpy
SQLAlchemy | BeautifulSoup | Boto3
Virtualenv

Javascript

ES6 | Vue.js | React.js | Axios | Vuex | Nuxt.js
Aurelia | Quasar Framework | npm | D3.js
Leaflet.js | NextJS

Linux

Debian & RPM based distros | Shell scripting
bash/zsh | Vagrant & VirtualBox | VPS servers

Testing

Pytest | Unittest | Selenium | Mocha.js

Fortran

Numerical modelling | high-performance computing

Version Control

Git | Github | Gitlab

Databases

PostgreSQL | DynamoDB

Backend & DevOps

Docker | DigitalOcean | DNS | REST APIs
Nginx | CaddyServer | AWS (Lambda, SNS, SQS, S3, SAM) | CI/CD | MVC

Frontend & Design

HTML | CSS | SASS | Vuetify | Bootstrap
Tailwind CSS | Responsive design | Inkscape
Contentful | DatoCMS

HOBBIES

I have a tech blog at johnckeaaly.medium.com, and I will keep writing about new tech as I figure it out! I love hiking, camping, and reading books about how the robots are rising.