John Ginger

I'm a seasoned full-stack developer, transforming concepts into live products, from websites viewed by millions, to AI drug discovery and self-driving cars. I excel in cross-functional dynamic settings, swiftly developing and launching robust products and features.

Education

2009–2013 University of Cambridge

MEng Engineering (Distinction)
BA Manufacturing Engineering (First)

Skills

Excellent (Recently applied in a major project)

Rust, Python, React, AWS, HTML, CSS, Kubernetes, Docker, Postgres, GraphQL, Typescript, NodeJS, Javascript, GPT-4, Large Language Models (LLMs), GCP, Terraform

Experienced

C++11, Java (Spring), C#

Outside of Work

Cycling, Martial Arts, Bouldering, Travelling, Wild Camping, Triathlon, Board Games, Underwater Rugby

Random fact

I have designed and built my own furniture

Freelance - Francis Crick Institute (part time)

I was a member of an AI research team exploring the potential for artificial intelligence to automate aspects of biology. Our efforts culminated in a paper that was accepted at EMNLP, a top-tier conference in the field of AI. The paper is available for reference at https://arxiv.org/abs/2310.10632.

Key Projects

- Conducting experiments and fine-tuning large language models, including GPT-4.
- Developing a data import pipeline to process, clean, and store biological protocols in a database.
- Creating a fast, memory-efficient Rust-based system for downloading papers, enriching them with additional metadata, and storing them in a database, enabling the storage of millions of papers.
- Providing infrastructure and technical support to other members of the research team.

Semper (meetsemper.com) - (March 2022 - Nov 2023) - Remote - 4 days a week

At Semper, we conducted recurring, end-to-end secondary transactions for the teams of rapidly expanding startups. As one of the two software engineers on the team — full-stack with a focus on backend — I played a crucial role in steering the company towards a successful acquisition by Crowdcube.

Key Projects

- Building a database to efficiently query and save equity records and transactions for thousands of users, managing millions of dollars in monetary exchanges.
- Creating a tax calculation engine suitable for multiple countries and types of equity.
- Conducting data cleaning and preparation to ensure the consistency and accuracy of data received from companies.
- Developing internal tools to enable team members to efficiently process transactions, onboard users, and provide user support.
- Constructing React frontend interfaces, in collaboration with designers and product managers, for various product aspects including capturing and displaying accurate tax and equity statuses.
- Setting up a CI system to facilitate rapid building and testing of code, which can build, test and deploy the entire project in under 15 minutes
- Utilizing Rust to implement backend services, including email notifications, Slack notifications, and biometric authentication.
- Building a tamper-proof PDF document signing service, compliant with eIDAS Regulations.

Exscientia (Jan 2020 - Jan 2022) in Oxford, UK

Senior Data Engineer - Team Lead - Compound Selection Team

Exscientia, an AI biotech firm backed by Softbank, specializes in leveraging artificial intelligence for drug discovery. The company has experienced rapid growth, while I was there expanding its team from approximately 40 to over 180 members, securing more than $675 million in funding, and achieving a NASDAQ listing valued at over $2.5 billion.

Key Projects

- Developed a system to allow defining the running of ML workflows at scale, deployed across several company projects.
- Built a system to allow medicinal and computational chemists to get real-time AI predictions of drug properties which was used on drug discovery projects.
- Started fortnightly demo sessions which grew in attendance and were gradually rolled out to other teams and contributed to technical standards and code review
- Led the architecture and management of the compound selection team, successfully capturing outputs from AI-driven drug design processes, securely storing billions of records, and developing a React-based web interface to facilitate swift searching and retrieval of pertinent information, thereby expediting the drug development process.

Wayve (April 2019 - Jan 2020) in Cambridge/London, UK

Squad Lead - Fleet learning

Wayve specializes in the development of autonomous vehicles. The Fleet Learning Team plays a crucial role in this endeavor, focusing on the strategic collection of data and the optimized deployment of vehicles.

- Designed and helped implement a system to transfer petabytes of data from SSDs to Azure cloud storage.
- Created a highly scalable Postgres database to store ingested data and extract crucial statistics from vehicle tracking.
- Developed our automated CI/CD pipeline, negotiated and equipped a data center with GPU compute, configured networking, and developed a user-friendly GUI to monitor status and progress. Additionally, incorporated GPU processing within Kubernetes for machine learning workloads.
- Tackled debugging and configuration challenges in a monorepo, working with both C++ and Python builds and utilizing Docker and Bazel.
- Had managerial responsibilities and provided team leadership to ensure optimal performance and achievement of objectives. This included supervising technical designs, supporting team members, enhancing individual performance, and the recruitment and interview processes for potential candidates.

Consultancy Work (Feb 2018 - April 2019)

I took a sabbatical travelling the world, visiting places from New Zealand to Peru. While travelling and after returning to London I completed a range of freelance consultancy work. Projects included:

- Setup automatic CI/CD, which automatically tested and deployed branches for testing using Docker, ECS and bitbucket pipelines
- Creating a React SPA with a C++ and Postgres backend to count the number of fish caught on a boat from uploaded video footage
- Machine translation of legacy scanned PDFs into a machine-readable format and a React SPA to display the results
- Using GraphQL to combine different microservices and writing a translation layer for a legacy API

Vivacity Labs (Aug 2016 - Feb 2018) in London, UK

Tech Lead (Fullstack)

First experienced engineer at a fast-growing startup that does machine learning and video analytics to provide smart, hyper-local data for smart cities and intelligent transport systems.

- Creation of a robust web portal for a FTSE listed company to ingest, store and analyse 100,000's of hours of uploaded video using C++ based machine learning and scaling GPU based processing with a Kubernetes cluster running on both physical and cloud machines. Also building interactive visualization of the processed data, including video overlay and summary reports
- Created a tool to enable the annotation by overseas contractors of 100,000's of images, which was used for training ML models
- Developing a robust system to ingest data from a citywide network of sensors and run various processing and filtering steps before serving as an API. Created multiple tools to visualize this data, including joining paths of detected pedestrians and showing density of crowded scenes
- Team Lead responsible for full-stack development, including running as scrum master for the whole team on a rotating basis, giving fortnightly presentations to the rest of the company and instituting regular team update meetings with internal and external stakeholders

- Mentoring and training junior developers, including extensive code review, putting in place coding standards, guidelines and review processes to help maintain code quality.

Softwire Technology Ltd (Jan 2015 - Aug 2016) in London, UK

BBC Monitoring – Portal Rebuild

Team replacing an underused legacy application with a powerful and engaging new web portal which significantly grew the clients reach and subscriber-base

- Delivered reliable and performant responsive website for desktop, tablet and mobile devices, which met strict accessibility standards, including testing with screen readers
- Based on an Elasticsearch database deployed on the AWS cloud providing rich search capabilities and notifications

BBC News - Newsbeat Responsive Website

Created a high traffic (target of 2 million daily users) responsive mobile-first website and assisted in the creation of two native mobile applications (iOS and Android).

- Successful delivery of slick, impressive website using modern web technologies, pairing with designers to allow rapid prototyping and iteration of designs
- Javascript profiling and optimization to create high-performance effects on lower-powered mobile devices

Robot Industries Ltd (2013 - 2014) in London, UK

Director

As part of the EF2 (Entrepreneur First) Cohort founded a startup that created educational toy robots to teach children programming. We had a successful Kickstarter raising over £20,000 pounds and shipping hundreds of robots.

- Developed a web-based programming environment that progressed from Scratch-like drag-and-drop programming into programming directly in Javascript
- Wrote a cloud compilation service that allowed Javascript programs to be converted into native C++ and run on physical robots
- Developed a new robot design from scratch, including programming firmware, designing a circuit board that interfaced with USB, mechanical design, integration
- Manufactured over 200 robots, including dealing with manufacturing, supply chain and customer problems.

Cambridge University Autonomous Flight (2010 - 2013) in Cambridge, UK

President (Student Society)

At University founded the Cambridge University Autonomous Flight Society. In the first year of running the competition, the team achieved 3rd place in the indoor autonomy challenge of the 2010 International Micro Air Vehicle Challenge