

Jacob Hesselvig Fredsøe

Senior Consultant · Python/FastAPI Backend, React Frontend, Production Operations

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PROFILE

Developer with 10+ years of writing software as well as full ownership of systems running in production. I work across a Python backend, a React frontend and the operational layer that keeps both running: Docker, Kubernetes, CI/CD, infrastructure as code, monitoring, alerting and the documentation that lets someone else take over. I have taken systems from first commit through production launch and the maintenance that follows, on client engagements and on my own commercial platforms. A decade of supervising PhD and MSc students and teaching before I moved into consulting means mentoring and technical direction are familiar ground.

SKILLS

Backend: Python (FastAPI, async, Pydantic), REST and GraphQL API design with typed contracts and automated tests; C#/.NET, PHP/Laravel.

Frontend: React, Next.js, TypeScript, Apollo GraphQL. Production applications including payment flows and operational dashboards.

Data & storage: PostgreSQL, SQL modelling, Dagster, ETL/ELT pipelines, real-time ingestion.

Infrastructure & CI/CD: Kubernetes in multi-project production use, Docker and Docker Compose, Terraform, GitHub Actions, GitLab CI, automated testing and release pipelines, Git.

Observability & operations: Grafana, Sentry, Preset (Apache Superset), structured logging, data-quality checks, on-call incident response.

Cloud: Azure in production, plus Hetzner and Cloudflare (DNS, edge, storage).

Languages: Python, C#/.NET, TypeScript/JavaScript, R, PHP, SQL.

Ways of working: Code review, incremental delivery, AI-assisted development (Claude Code, agentic workflows) with human review of everything that ships, stakeholder communication.

EXPERIENCE

Bunker Holding A/S · Consultant Developer, Data Scientist & Infrastructure Engineer

Jan 2024 – June 2026 · Aarhus, Denmark

Modernising the data platform behind real-time pricing for global trading operations: scalable APIs, automated pipelines, message-based integration, and a production platform the internal team can operate.

- Designed and built Python backend services and GraphQL APIs serving real-time pricing to trading systems, with explicit contracts, validation, and traceability.
- Built and operated the full production stack on Kubernetes with automated CI/CD.
- Implemented monitoring, structured logging, alerting, and data-quality checks (Dash0, Grafana, Sentry, Preset) that cut time-to-detection on pipeline failures from hours to minutes.
- Worked embedded in the client's team: code review, technical direction, and handover documentation so the platform is maintained internally.
- Delivered a real-time pricing engine running in production, with statistical and ML models integrated into the serving path.

Python · GraphQL services · Dagster · PostgreSQL · Kubernetes · Docker · CI/CD · Azure · Azure Service Bus · Grafana · Sentry · Preset

Fredsøe Consult ApS · Principal Developer

Dec 2024 – Present · Aarhus, Denmark

Building and operating commercial SaaS platforms end to end; backend, frontend, payments, and infrastructure

- finansberegner.dk. Financial calculator platform built on a FastAPI backend and a Next.js/React frontend, with PostgreSQL, Stripe payments and Dagster pipelines, deployed using Docker to Kubernetes via automated CI/CD.
- sponsometer.com. Sponsorship and charity run platform using Next.js/React, Apollo GraphQL and PostgreSQL, with checkout flows and real-time tracking on Kubernetes.
- Designed API contracts, data model, test suite, and release process from scratch; also built a separate FastAPI ETL/notification service with change detection and scheduled email delivery.
- Run the full operational side: DNS and networking on Cloudflare, backups, Grafana dashboards and Sentry alerting.

Python · FastAPI · React · Next.js · TypeScript · PostgreSQL · Dagster · Kubernetes · Docker · Cloudflare · Stripe · CI/CD · Grafana · Sentry

MediSkill ApS (medtech startup) · Co-Owner, Developer & Data Scientist

Sep 2022 – Dec 2024 · Denmark

Co-owner of a medtech startup and built its entire technical platform, deployed across multiple clinical sites under health-data compliance.

- Backend (Laravel/PHP), React frontend, mobile app and REST APIs, plus the infrastructure to deploy and operate them.
- Real-time dashboards and visualisation tools for medical training analytics, used daily in clinical settings.
- Set technical direction and standards in a small team.

PHP · Laravel · React · REST APIs · MySQL · Deployment & operations

Aarhus University (MOMA) · Associate Professor / Assistant Professor / Postdoc

Jan 2014 – Dec 2023 · Aarhus, Denmark

Led EU-funded research programmes on large-scale clinical and molecular datasets, which in practice meant running a long-lived software and data platform with a rotating team of users.

- Supervised PhD students and taught advanced MSc and PhD level courses. Mentoring, technical direction and building other people's capability were the core of the job.
- Developed automated data-processing pipelines in Python, PHP, C#, and R that became the standard tooling of the research group and remained in use after I handed them over.
- Established validation, versioning, documentation, and reproducibility practices around datasets and models.
- Coordinated international collaborations and managed EU trial compliance; published 34 peer-reviewed papers.

Python · C#/.NET · R · SQL · ETL pipelines · Statistical modelling · Machine learning

Frontal Lobe ApS · Part-Time Consultant

Nov 2018 – Apr 2024 · Denmark

Long-running engagement on clinical data-management systems across 20+ research projects.

- Custom APIs and workflow automation on top of REDCap.
- Owned data structure design, validation, integration and compliance; improved data reliability across the portfolio.

PHP · REST APIs · MySQL · REDCap · Data integration

EDUCATION

Aarhus University: PhD, Molecular Biology (2014) · MSc (2010) · BSc (2008)

LANGUAGES & OTHER

Languages: Danish (native) · English (fluent, written and spoken)

Conferences: KubeCon + CloudNativeCon Europe 2024, Paris (attendee)

Availability: Available from August 2026.