Arnaud Obri, PhD

Software Developer | Biomedical Scientist

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PROFILE

Full-stack engineer with a PhD and 10+ years leading complex, data-heavy R&D programs. Built and shipped mobile, web, and backend platforms end-to-end, integrating AI features and robust data pipelines. Combines rigorous analytical thinking with pragmatic product delivery to turn ambiguous requirements into scalable, user-centric software.

Areas of Expertise: biomedical informatics, computational biology, science-to-software translation
Top soft skills: high accountability & reliability, strategic decision-making, relationship-first collaborator, analytical, systems thinking.

EXPERIENCE

Tiburon Sorting Systems: Full-Stack Engineer   Nov 2024 -present

- Led the full-stack development of a strategic gamified mobile application designed to significantly increase recycling engagement and foster sustainable behavior across Europe.
- Engineered a robust, cross-platform mobile application (React Native, Expo) enabling public users to scan waste container QR codes and receive real-time AI-analysis feedback on their waste sorting.
- Developed comprehensive internal and partner-facing web applications (Next.js) for administrators and merchants to efficiently monitor recycling performance, manage user rewards, and analyze critical operational data.
- Architected and implemented scalable RESTful APIs and managed databases to seamlessly connect mobile and web platforms with AI services, waste categorization logic, reward systems, and secure user authentication (Auth0).
- Regularly presented development advancements to the company owner, ensuring alignment with strategic vision and incorporating feedback for continuous product enhancement.

IDIBAPS: Lead Scientist - Computational Epigenomics in Metabolic Diseases   Jan 2018 -Oct 2024

- Led the design of both wet lab experiments and computational strategies for projects studying epigenetic gene regulation in metabolic diseases
- Developed and improved bioinformatics pipelines using R and Python to analyze genetic and epigenetic data, guiding data analysts to find key insights.
- Managed a team of researchers, combining computational and lab work to achieve project goals.
- Secured over 200.000 € in public funding by identifying funding sources and writing grant proposals.
- Managed the project, including risk assessment, mitigation plans, and budget control, ensuring efficient use of computational resources.
- Contributed research that resulted in 3 peer-reviewed publications, serving as the corresponding author.
- Built networks and coordinated with partners to advance the project, including discussions on data and computational needs.

EDUCATION

arol.dev (Barcelona, Spain)   2025
Software Engineering

University of Strasbourg (Strasbourg, France)   2012
Ph.D in Molecular Biology

SKILLS

Languages: English (Native), French (Native), Spanish (Professional)

Programming Languages & CS Fundamentals: JavaScript, TypeScript, HTML, Python, CSS, Markdown, Data Structures, Algorithms, Bitwise operations

Frontend Engineering: React (basic/advanced hooks, routing, design patterns, optimization), Vue, Next.js, NestJs, Tailwind CSS, Vite, React Native (Expo), TanStack Query, Redux/Zustand/MobX, React Hook Form, Zod, TanStack/React Router, Shadcn, Chakra UI, SSR, SSG, JS Bundlers.

Backend Engineering & APIs: Node.js, Express, Hono, FastAPI, Django REST API design, GraphQL, AuthN/AuthZ (JWT, OAuth2, sessions), Backend design patterns (MVC), ORMs (Prisma, Drizzle), Backend-as-a-Service (Firebase, Supabase), contract-first.

Databases & Storage: PostgreSQL (SQL), MongoDB (NoSQL)

Cloud, DevOps & Infrastructure: AWS, Docker, Kubernetes, CI/CD (GitHub Actions), Deployment pipelines, Monorepos (Turborepo), Terraform.

Networking, Performance & Security: HTTP, Networking fundamentals & REST best practices, Performance optimization, Web application security.

Testing & Quality: Unit & integration testing, Jest, React Testing Library, Cypress (E2E), Vitest

Tools, Process & Collaboration: Git, GitHub, VS Code (debugging), Shell/Zsh, Agile (Scrum/Kanban)

Bioinformatics & Computational Biology: Genomics, Epigenomics (ChIP-seq, ATAC-seq, bisulfite/methylation), Transcriptomics (bulk RNA-seq, differential expression), Single-cell (scRNA-seq; Seurat), QC/alignment/quantification (FastQC/MultiQC, STAR/BWA/Bowtie2, Salmon/Kallisto, MACS2), Statistical analysis (R/Bioconductor: DESeq2, edgeR, limma), Visualization & annotation (IGV, UCSC Genome Browser, GSEA/fgsea, clusterProfiler, GO/KEGG/Reactome).