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Professional Summary

Highly experienced Full-stack software developer with 8+ years in building scalable, high-performance web applications, across academic research (ETH & UZH) and Fintech (PostFinance & UniCredit) environments. Proficient in Python, React, and Java, with expertise in designing microservices, implementing CI/CD pipelines, and working in Agile/Scrum. Passionate in bridging the gap between complex domain requirements and production-ready microservices by developing impactful solutions, optimizing performance, and leveraging AI/ML for innovative applications.

Core Competencies

Programming Languages: Python, Java, JavaScript, TypeScript, SQL
Frontend: React (Hooks), Redux, HTML5, CSS3, Responsive Design
Backend: Python (Flask, DJango), Java (Spring Boot), RESTful APIs, Microservices
Databases: MySQL, MongoDB, Oracle, DynamoDB, H2
Cloud & DevOps: AWS (Lambda, S3, Cognito, SES, API Gateway), Docker, Kubernetes, Jenkins, Git
AI & Data: Machine Learning (scikit-learn), Deep Learning, LangChain, ChromaDB, LLM integration, Pandas
Authentication & Security: OAuth2, SAML, JWT, Role-Based Access Control
Monitoring & Tools: Grafana, Sentry, Google Analytics 4, Swagger, Maven, Gradle, Jira
Methodologies: Agile, Scrum, Kanban, CI/CD pipelines, Test Automation

Professional Experience

Application Software Developer

ETH Zurich – Zurich, Switzerland | *09/2023 – Present*

- Developed and maintained **openBIS**, a large-scale scientific data management platform deployed via Docker across 300+ global installations, supporting 1000+ researchers.

  - Designed and deployed an AI-powered chatbot utilizing **Retrieval-Augmented Generation (RAG)**, LangChain, and ChromaDB to provide intelligent user support via internal documentation.

- Spearhead frontend developer on the **PREMISE** Project (under **MADICES** context), developing specialized components for 1D/2D microscopy data processing and visualization.
- Designed and implemented a metadata-driven dynamic form engine, enabling researchers to visualize custom object and generate complex UIs programmatically.

- Initiated and architected a semantic engine using **Apache Jena** to convert RDF/OWL data into openBIS structures, fostering data exchange across heterogeneous systems.

- Developed robust data pipelines using Python and Shell scripting for the ETH Library, managing a **200TB+ MySQL database** including annual bulk loads and weekly incremental updates.

- **Technologies:** React, Python, Flask, LangChain, ChromaDB, Pinecone, Java, RDF, Apache Jena, Spring Boot, Jenkins.

Scientific Software Developer (Lead Frontend)

University of Zurich – Zurich, Switzerland | *10/2020 – 08/2023*

- Served as the Technical Lead for the **Microbe Atlas Project (MAP)**, evolving the platform into MAP 2.0 to support intensive biological data analysis.

- Architected the migration from a monolithic structure to a microservices-based system, utilizing a React frontend and Python/Flask REST APIs.

- Designed scalable data processing pipelines using **Python** for complex statistical and biological workflows.

- Integrated a modern monitoring stack (**Grafana, Sentry, GA4**), reducing downtime and improving system visibility for research stakeholders.

- Established CI/CD pipelines and automated deployment strategies via Docker and Jenkins, accelerating release cycles and enhancing stability.

- **Technologies:** Python, Flask, React, SQLAlchemy, Docker, Jenkins, MySQL, Grafana, Sentry, GA4.

IT Consultant

PostFinance AG (via Business Solution Group) – Zurich, Switzerland | *04/2020 – 10/2020*

- Developed **CPLKU**, a mission-critical compliance and customer validation platform used internally by PostFinance staff.

- Designed and implemented complex business processes using **BPMN 2.0** via Camunda Modeler, integrating them with Java backend services.

- Built backend services in **Java 11 (Spring Boot)** and interactive UIs in **Angular (v8/9)** to handle sensitive financial validation data.

- Designed SOAP and RESTful services for internal interoperability within different services.

- Implemented automated testing strategies using Mockito and ensured code quality through SonarQube.
- **Technologies:** Java, Spring Boot, Angular, Camunda, SOAP, REST, Kubernetes, Sonar, Mockito.

Software Engineer

Business Solution Group – Zurich, Switzerland | *10/2019 – 03/2020*

- Architected and built AWS-native web application, including the "Karriere.bsgroup.ch" recruitment and interview management platform.
- Implemented secure authentication and authorization systems leveraging **AWS Cognito, Lambda, SES, API Gateway, and DynamoDB**.
- Integrated OAuth and SAML-based Single Sign-On (SSO) with Office 365 for seamless corporate authentication.
- **Technologies:** AWS (Lambda, Cognito, SES, DynamoDB), Angular, OAuth, SAML, Java.

IT Consultant

UBIS (UniCredit Group) (via I-Seed) – Milan, Italy | *06/2018 – 09/2019*

- Developed and maintained a proprietary CRM platform deployed across European branches of UniCredit, running on JBoss servers.
- Implemented **Role-Based Access Control** using custom Identity and Access Management (IAM) logic and **Oracle Virtual Private Database**.
- Performed advanced database modeling and PL/SQL scripting for data analysis, performance tuning, and portfolio management modules.
- Redesigned legacy features to improve usability and API performance for cross-platform integrations.
- **Technologies:** Java 8, Oracle SQL/PLSQL, JBoss, REST, SOAP, Maven, Jenkins.

Full-Stack Developer

I-Seed – Milan, Italy | *01/2018 – 06/2018*

- Developed a blockchain-based **Initial Coin Offering (ICO)** management ecosystem consisting of a Launchpad and an Administrative Dashboard.
- Implemented security architecture using **Spring Security, OAuth2, and JWT** for multi-role administrative environments.
- Developed complex, stateful registration wizards using **React and Redux**.
- **Web3** integration of the **MetaMask** plugin to facilitate and simulate Ethereum blockchain transactions.

- **Technologies:** Java, Spring Boot, React, Redux, Spring Security, OAuth2, JWT, H2, Swagger, Blockchain/Ethereum.

Junior Developer

NS12 – Rome, Italy | *04/2017 – 12/2017*

- Contributed to **CEANT 2.0**, a national-level Antimafia Certification Database supporting ANAS public works.

- Created tools for high-volume document management, bulk PDF/Excel processing (Apache POI), and reporting tools.

- Built dynamic search and filtering interfaces using **AJAX and jQuery**.

- **Technologies:** Java 6, jQuery, AJAX, SQL, Struts, JDBC, Apache POI, HTML.

Education

- **Master's Degree in Applied Computational Life Sciences** ZHAW School of Life Sciences – Switzerland | *2021 – 2024*

- **Bachelor's Degree in Computer Science** La Sapienza University – Rome, Italy | *2014 – 2018 (Thesis based on development and research performed at NS12)*

Languages

- **English:** Fluent

- **Italian:** Native

- **Romanian:** Native

- **German:** Basic