

GIOELE BIGINI, PhD

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Languages: English (Fluent), Italian (Fluent), Spanish (Fluent), German (Beginner)



PROFILE SUMMARY

Senior Full Stack Software Engineer, Data Engineer, System Engineer, and Researcher, with relevant participation and collaborations in prominent companies and institutions such as **EIT Digital**, **IBM**, and **Nethermind**. A computer scientist who grew into databases and data science before moving into large-scale, production data systems. Strong research background with publications in top-tier journals such as **IEEE** and a **PhD** focused on the intersection of decentralized systems, digital health, and AI.

EDUCATION

Ph.D. in Research Methods in Science and Technology - University of Urbino 2019–2023
Thesis: *The InterPlanetary Health Layer*
Field: Distributed Ledgers, Artificial Intelligence and Digital Health
Awarded the **Honorary Title of Doctor Europaeus**.
Issued by Technische Universität Berlin, University of Groningen, and Universidad Politécnica de Madrid

ICT Double Degree in Data Science - European Institute of Innovation and Technology 2017–2019
Awarded the **Data Science Diploma** by the EIT Digital Master School

M.Sc. Computer Science and Engineering - Politecnico di Milano 2017–2019
M.Sc. Informatics Engineering - Universidad Politécnica de Madrid 2017–2019

TECHNICAL EXPERTISE

Python	SQL	Java	TypeScript	JavaScript	Golang	PHP
Rust	C	C++	C#	Haskell	Flutter	Spark
PostgreSQL	SQL Server	MongoDB	Redis	GCP	AWS	
React	NextJS	NodeJS	.NET	Docker	Git	Solidity
Jenkins	Ansible	KVM	Linux	Networking	Bash/Shell	Foundry
■ Familiar ■ Intermediate ■ Advanced						

ENGINEERING FOCUS

Website: gbigini.com **GitHub:** github.com/BigG-DSC.

Full stack engineering: Web applications (React, Next.js) and backends (Python, TypeScript, .NET). Smart contracts (Solidity) and Web3. Cross-platform mobile (Flutter). DevOps, CI/CD, and cloud (AWS, GCP).

Data engineering: Real-time and batch data pipelines; data platforms and models for analytics; backend APIs for DeFi and market metrics; database design, optimisation, and data integrity in production.

Areas I work in: Blockchain, Artificial Intelligence, Distributed Systems, Machine Learning, Big Data, Internet of Things, Digital Health, Decentralized Finance, Asset Management, Insurance, Banking.

RELEVANT PARTICIPATIONS AND CERTIFICATIONS

Doctor Europaeus International Honorary Title	2023	EIT Certificate IoT and Business Transformation	Aug 2018
European University Association		KTH/Ericsson, Stockholm, Sweden	
Visiting Researcher	Jan 2022–Aug 2022	IBM Collaboration on Fake News Detection	Jan–Jun 2018
Universidad Politécnica de Madrid, Madrid, Spain		IBM Segrate, Milan, Italy	
EIT Certificate eHealth Personalised Prevention	Aug 2020	HORIZON 2020 European Project CROWD4ROADS	Jun–Aug 2016
TalTech, Tallin, Estonia		Disruptive Media Learning Lab, Coventry, UK	
COMUNICA+A Collaboration on Digital Signage	Sep–Jan 2019	Erasmus+ Student Exchange	Sep–Jun 2016
COMUNICA+A, Madrid, Spain		Universidad Complutense de Madrid, Madrid, Spain	

PROFESSIONAL EXPERIENCE

Senior Full Stack Software Engineer, Digital Assets Platform Novel Labs Ltd, Switzerland

07.2024 - Ongoing
Digital Assets

- Leading the design and development of a platform supporting digital asset issuance, transaction workflows, and user-facing applications. Responsible for frontend systems, backend systems, and infrastructure. Collaborating closely with product and growth teams to improve system adoption, reliability, and scalability.
- Frontend development - Backend development - API and service integration - Smart contracts development - Data modeling - Web3 user-driven transaction workflows - DevOps, and CI/CD automation - Security-focused code reviews and internal audits

Security Engineer, Smart Contracts and Architectures Nethermind Ltd, Switzerland

07.2024 - 10.2024
Web3 Security Consulting

- Focused on auditing of financial smart contract systems used in production. Performed deep technical analysis of DeFi protocols and contributed to professional audit reports.
- Code review and vulnerability discovery in financial smart contracts - Analysis of failure modes, attack surfaces, and protocol-level risks - Collaboration with senior engineers on audit methodology and report delivery

Full Stack Software Engineer, Trading and Asset Management Systems Clearstar Labs AG, Switzerland

09.2022 - 06.2024
Asset Management

- Designed and implemented systems for real-time market analytics and automated asset management, spanning user-facing applications, backend services, and data pipelines. Built resilient APIs, data ingestion workflows, monitoring solutions, and interactive dashboards integrating multiple external data sources to support analytical insights and automated decision-making.
- Frontend development - Backend API development - Data ingestion and processing pipelines - Real-time and batch data workflows - Web3 transactional system implementation - Data platform design and development - Smart contracts development - Automation systems for trading - Cloud infrastructure and DevOps

Research Engineer, Distributed Ledgers and Health Data Systems Ontology Engineering Group, Spain

01.2022 - 08.2022
Applied Research

- Conducted applied research on secure, decentralized data sharing architectures in collaboration with industry partners. Designed and prototyped systems combining distributed ledgers, smart contract-based access control, and privacy-preserving data storage to enable controlled health data sharing across heterogeneous infrastructures.
- Distributed data system and architecture design - Smart contract development for access control and authorization policies - Secure and privacy-preserving data sharing mechanisms - Research prototyping and technical documentation

Full Stack Software Engineer, Digital Health and Data Platforms DIGIT srl, Italy

01.2021 - 08.2022
Tech Consulting

- Led the design, development, and deployment of a cross-platform mobile application and its supporting backend data platform for health and postural stability analysis, including data collection, processing, and visualization, while addressing GDPR requirements related to data privacy, user consent, and secure data handling.
- Cross-platform mobile application development (Android/iOS) - Backend service development - Health data collection and processing pipelines - Cloud infrastructure and DevOps

Backend Software Engineer and Data Engineering IMAR srl, Italy

2019.09 - 2020.12
Manufacturing

- Developed business intelligence solutions and data processing systems to enable data-driven decision-making. Designed data collection workflows and analytical models to estimate consumer behavior, preferences, and demand forecasts.
- Data engineering and analytics pipelines - Business intelligence systems - Applied machine learning for consumer behavior analysis

Junior Software Engineer, Data Platforms NETLEVEL srl, Italy

03.2017 - 09.2017
Insurance and Banking

- First professional experience in the insurance and banking sector, contributing to the design, implementation, and maintenance of enterprise data platforms. Focused on database architecture, data integrity, performance optimization, and system reliability in a regulated production environment.
- Database design, development, optimization, and maintenance - Backend development

Bigini, G. (2023). *The InterPlanetary Health Layer*. PhD Thesis.

Bigini, G., Zichichi, M., Lattanzi, E., Ferretti S., & D'Angelo G. (2023). *On the Decentralization of Health Systems for Data Availability: a DLT-based Architecture*. IEEE CCNC, 372-377.

Bigini, G., & Lattanzi, E. (2022). *Toward the Interplanetary Health Layer for the Internet of Medical Things with Distributed Ledgers and Storages*. IEEE Access, 82883-82895.

Bigini, G., Zichichi, M., Lattanzi, E., Ferretti S., & D'Angelo G. (2022). *Decentralized Health Data Distribution: A DLT-based Architecture*. IEEE Blockchain, 97-104.

Bigini, G., Freschi, V., Bogliolo, A., & Lattanzi, E. (2021). *Decentralising the Internet of Medical Things with DLT and Off-Chain Storages*. Springer GOODTECHS, 80-90.

Bigini, G., Freschi, V., & Lattanzi, E. (2020). *A Review on Blockchain for the Internet of Medical Things*. Future Internet, 12(12):208, MDPI.