

# Samuel Zidarič

Data Engineer & Neuroscientist

samzidarič@gmail.com | samuelzidarič.com

## About Me

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Data engineer with a neuroscience background, working at the intersection of EU-funded research and applied data systems. I design databases, build data pipelines, and write project deliverables across environmental and marine science consortia. I care about FAIR data principles, clean schema design, and making research data actually usable. Natively bilingual in Slovenian and Italian, fluent in English.

## Professional Experience

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### Data Manager / Data Engineer

Jul 2024 – Present

*Infordata Sistemi Srl, Trieste (IT)*

- Data management and engineering across multiple EU-funded Horizon and LIFE projects: TASC-RestoreMed, KARST FIREWALL 5.0, CLEAR-WATER, INSPIRE, REMEDIES
- Designed and maintained MySQL databases for internal software products (GoPlanner, SubMan)
- Built Python data pipelines for ETL, geocoding, data cleaning, and cross-system integration
- Authored and contributed to EU project deliverables, technical specification sheets, and consortium communications
- Built and maintained web scraping tools for EU project metadata (CORDIS)
- Managed EMODnet-compliant marine litter dataset submissions and partner data imports
- Contributed to RAG system development: hybrid retrieval (BM25 + ChromaDB), re-ranking, evaluation pipelines

### Research Fellow – FAIR-by-Design Project

Nov 2024 – Jun 2025

*Area Science Park – Laboratory of Data Engineering (LADE), Trieste (IT)*

- Selected for a competitive fellowship on FAIR data methodology for scientific research
- Developed automated Python tools for validation and analysis of Oxford Nanopore sequencing data
- Applied topological data analysis techniques to FAIR-compliant datasets
- Contributed to methodologies for improved data acquisition and sharing in research contexts

### Research Intern – Laboratory of Data Engineering

Mar 2024 – Jun 2024

*Area Science Park, Trieste (IT)*

- Curricular internship focused on FAIR principles and data management best practices
- Worked on data pipelines and tooling for scientific data processing

### Master Thesis – Zimmer Lab

Mar 2023 – Mar 2024

*University of Vienna (AT)*

- Tested a novel optogenetic and tracking microscope, calibrating LED light intensity performance
- Performed video analysis of *C. elegans* behavioral responses to optogenetic stimulations
- Revised and improved the behavioral analysis pipeline for the microscope
- Trained and refined neural networks for body part tracking with DeepLabCut

## **Student Internship – BIA Separations (Sartorius)**

**Aug 2022 – Dec 2022**

*Ajdovščina (SI)*

- Performed analytical assays: SDS-PAGE, Bradford, PicoGreen
- Executed chromatography runs using AKTA systems for protein purification
- Contributed to AAV and Adenovirus downstream method development for gene therapy

## **Bachelor Thesis – Tongiorgi Lab**

**May 2019 – Oct 2019**

*University of Trieste*

- Investigated the role of BDNF in neuronal development
- Utilized PCR, cryostat sectioning, gel electrophoresis, and in-situ hybridization

## **Additional Roles**

**2015 – 2023**

*Various locations*

- Professional Basketball Player (2015 – 2023)
- Minibasket Coach for children aged 8–12 (2016 – 2021)
- Middle School Teacher – substitute (Mar 2021 – Jun 2021)

## **Education**

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### **Master in Data Management and Curation (MDMC)**

**Sep 2024 – Jun 2025**

*SISSA & Area Science Park, Trieste*

60 ECTS professional master's programme focused on FAIR-by-design methodologies for research data management.

Coursework: Open Science, Research Data Management, Scientific Programming with Python, Cloud Infrastructure, AI for Scientific Applications.

### **Master of Neuroscience**

**Sep 2021 – Mar 2024**

*University of Trieste, Department of Life Sciences*

### **Bachelor of Biology**

**Sep 2017 – Mar 2021**

*University of Trieste, Department of Life Sciences*

### **Scientific Lyceum Diploma**

**2013 – 2018**

*Liceo Scientifico France Prešeren, Trieste*

## **Awards & Recognitions**

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### **Research Fellowship – FAIR-by-Design Project**

**2024 – 2025**

*Area Science Park, Trieste*

Competitive research fellowship for FAIR data methodology in scientific research.

*ZKB Cooperative Bank*

Merit-based scholarship supporting Master's studies in Neuroscience.

## Skills

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**Languages:** Slovenian (Native), Italian (Native), English (Fluent), German (Basic)

**Programming:** Python (Advanced – pandas, SQLAlchemy, FastAPI, Streamlit), R, SQL (PostgreSQL, MySQL), Git, Bash

**Data & ML:** FAIR data principles, ETL pipeline design, data quality frameworks, RAG systems (ChromaDB, BM25), web scraping, API integration (Gemini, REST)

**Platforms:** EMODnet, CORDIS, EU Open Data Portal, Overleaf /  $\LaTeX$

**Soft Skills:** Technical writing (EU deliverables), cross-consortium coordination, problem-solving, coaching

**Interests:** Basketball, data ethics, Adlerian philosophy, game development, MMA