

# BENJAMÍ MORENO TORRES

## Data Science & AI Lead

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## SUMMARY

Data and AI leader with 10+ years applying machine learning to complex R&D problems across industry and research. Unique combination of quantitative rigor (Mathematics), systemic thinking (Architecture), and hands-on ML execution (Python, Bayesian models, NLP, ontology engineering). Proven track record leading international project teams, coordinating multi-stakeholder deliverables, and bridging technical depth with strategic vision. Seeking a Data Science or AI Lead role in an organization with strong R&D.

## EXPERIENCE

### AI & Data Science Lead | *Technische Universität Berlin* | Berlin, Germany

Apr 2023 – May 2026

*Horizon Europe project REINCARNATE — circular construction materials*

- Led a work package spanning 6 partner organizations across 4 countries, owning deliverables, timelines, and technical integration end-to-end.
- Applied Bayesian Networks and Markov Chains for predictive life-cycle assessment, enabling data-driven material selection decisions.
- Designed ontology-based data architecture (OWL/RDF/SPARQL) for FAIR interoperability across 12+ heterogeneous research datasets.
- Co-authored and coordinated industrial deployment of SLAMD (Sequential Learning App for Materials Discovery) — open-source AI tool for sustainable materials design, published in NanoWorld Journal (2023) and actively cited in current research.
- Supervised 4 graduate researchers in AI and digital construction; guided projects from scoping to publication-ready outputs.
- Managed stakeholder communication across academia, industry, and EU project officers.

### Machine Learning Researcher | *BAM – Federal Institute for Materials Research* | Berlin, Germany

2020 – Jan 2023

- Built predictive ML models (clustering, regression, ensembles) for material durability and circularity assessment at one of Europe's leading materials research institutes.
- Structured and analyzed databases on Alkali-Activated Concretes from heterogeneous experimental sources, enabling reproducible ML workflows.
- Developed data pipelines for EU digitalization projects in materials science, improving cross-institutional data quality and accessibility.
- Collaborated with interdisciplinary teams of chemists, physicists, and engineers to translate domain expertise into ML feature engineering.

## Data Scientist & ML Engineer | 3S'TECH S.L. | Girona, Spain

2016 – 2020

### Structural Health Monitoring (SHM)

- Developed predictive algorithms for real-time structural health monitoring using IoT sensor networks on civil infrastructure.
- Designed end-to-end data processing pipelines for sensor data ingestion, cleaning, transformation, and anomaly detection.
- Implemented ML models for engineering databases and concrete testing, improving assessment accuracy for structural integrity.

## Data Scientist — NLP & Analytics | Symanto GmbH | Nürnberg, Germany

2012 – 2016

- Built Python and C# tools for social media sentiment analysis and market research, processing large-scale unstructured text data.
- Contributed to NLP pipelines (text classification, entity extraction) and graph-based influencer analytics for enterprise clients.
- Delivered actionable data insights for digital marketing campaigns, bridging technical analysis with business recommendations.

## Structural Designer & Architectural Engineer | Various Firms | Spain

2005 – 2011

- Structural design, planning, and valuation across residential, heritage, and public projects including the Disseny Hub Barcelona.
- Developed the systems-thinking, spatial reasoning, and multi-constraint optimization skills that now reinforce a distinctive approach to data architecture and ML system design.

## TECHNICAL SKILLS

**ML / AI:** Bayesian Networks, Markov Chains, LSTMs, Clustering, Regression, NLP, Graph Analytics, Ensemble Methods

**Languages:** Python (primary), R, C#, SQL

**Data & Semantic:** Ontologies (OWL, RDF, SPARQL), FAIR Data, Semantic Web, Linked Data, Data Pipeline Design

**Leadership:** International project coordination, Horizon Europe, multi-stakeholder management, team supervision, technology transfer

## EDUCATION

<b>PhD, Semantic Web Applications for Materials Discovery</b> — TU Berlin	Ongoing
<b>Master in Architecture (375 ECTS)</b> — Universitat de Girona	2010
<b>Master in Mathematics for Industry (60 ECTS)</b> — UAB	2001
<b>Degree in Mathematics (300 ECTS)</b> — UAB	2000

## SELECTED PUBLICATIONS

**Presenting SLAMD — A Sequential Learning Based Software for the Inverse Design of Sustainable Cementitious Materials**

Völker C., Moreno Torres B., et al. — *NanoWorld Journal*, 2023

**Data Driven Design of Alkali-Activated Concrete using Sequential Learning**

Völker C., Moreno Torres B., et al. — Available on ResearchGate

## LANGUAGES

Spanish & Catalan (native) · English (professional proficiency) · German (intermediate — strong passive skills, actively improving)