

TIAGO MOÇO FERREIRA

CONSULTANT & RESEARCHER IN TRANSPORTATION SYSTEMS

Summary: PhD with +10 years of experience in Transportation Systems & Infrastructures with main focus on design, modelling, simulation, predictive maintenance and resilience. Participation in international research, foresight, advisory and consultancy projects.

Skills: Problem solving | structured thinking | decision making | curiosity | adaptability communication | collaboration | organization | concentration | resilience | motivation



EXPERIENCE

2018 – Present

Senior Consultant TRANSPORT & INFRASTRUCTURES

MADRID | LONDON
www.arup.com

ARUP – Design, Engineering and Consultancy

Independent firm of designers, engineers, architects, planners, consultants and technical specialists working in the sectors of Transport, Cities, Energy and Water.

Consultant and project team leader in the fields of:

- Transport & Logistics (traffic management, planning, simulation and capacity analysis)
- Resilience to Climate Change (design, modelling, risk assessment, RAMS and LCC analysis)
- Predictive Asset Management (big data, machine learning and infrastructure digitalisation)

Performing as Arup's European Rail Digital Delegate in foresight advisory services.

2016 – 2018

Consultant TRANSPORT & OPERATIONS

MADRID
www.sener.es

SENER – Engineering and Technology Solutions

Leading international company in the sectors of Infrastructures and Intelligent Transport Systems, Aerospace, Energy and Marine.

Consultant in projects of railway and transit systems (Commuters, High Speed, Hyperloop, Metro, Light Rail Transit, Airport APMs, railway Stations, etc.)

Risk & Safety analysis of railway infrastructures along with planning and simulation of operational capacity of railway systems for governmental authorities as well as public and private companies.

2014 – 2016

Post-Doc Researcher RAILWAY SYSTEMS

IST – UNIVERSITY OF LISBON
www.tecnico.ulisboa.pt

CAPACITY4RAIL (EU R&D Project | 15.000.000€)

Increased capacity for rail networks through enhanced infrastructure and optimised operations

C4R brought together the major stakeholders of industry, IMs, operators, SMEs and universities.

Definition of design requirements and guidelines to improve the resilience of railway infrastructures against climate change; simulation and modelling; Operations; LCC and RAMS analysis.

2008 – 2014

Researcher INFRASTRUCTURE RESILIENCE

IST – UNIVERSITY OF LISBON
UPC – UNIVERSITY OF CATALONIA
www.upc.edu

BBBM - Barcelona Bubble Basic Model

Constitutive model suitable to analyse infrastructure behaviour due to traffic and geoenvironmental actions. Assessment of infrastructure resilience to climate change and extreme weather events.

MODURAIL - Modelling Dynamic Uncertainty in Railway track life cycle costs

Software application to assess track deterioration, infrastructure maintenance and cost prediction.

BITURAIL - Optimization of High-Speed Railway Track using Bituminous Subballast

Development of new structural solutions and design optimization through FE modelling & LCC analysis.

PERSONAL



Name

Tiago Moço Ferreira



Date of Birth

17 June 1984



Nationality

Portuguese



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SOCIAL



LinkedIn

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Website

www.tiagomocoferreira.com



Skype

tiago.moco.ferreira

LANGUAGES

Portuguese | Native

Spanish | Proficient

English | Proficient

Catalan | Basic

MAIN EXPERTISE

Transportation Systems

Design | Modelling | Simulation | Planning
Operations | Capacity | Resilience | M&R
Railways | Roadways | Airways | Logistics
Risk & Safety Analysis | RAMS & LCC

</> Numerical Modelling & Analytics

Data Mining | Big Data | Statistics
Machine Learning | System Dynamics
Multi-modal simulations | Traffic Planning
Agent-based Modelling | GIS-based data

Project Management

Coordination | Team Building | Negotiation
Reporting | Assessment | Project Creation
Communication | Organization Sci. Events
Consultancy | Advisory | Foresight

TECHNICAL TOOLBOX

Programming & Statistics

- ✓ Python
- ✓ MATLAB
- ✓ C++
- ✓ Fortran


Modelling & FE Analysis


- ✓ LS-DYNA
- ✓ ANYLOGIC
- ✓ VISUM
- ✓ OPENTRACK
- ✓ GIS

>_ MS Office Tools

- ✓ Word
- ✓ Excel
- ✓ Visual Basic
- ✓ PowerPoint
- ✓ Access
- ✓ Project
- ✓ Visual Studio
- ✓ SharePoint

INTERESTS

 Science | Physics | Aerospace | Technology

 Computer Science | Artificial Intelligence

 Philosophy | History | Politics | Economics



EDUCATION

2010 – 2015

PhD - Doctoral Degree

TRANSPORTATION SYSTEMS

IST – UNIVERSITY OF LISBON
MIT Portugal Program
Massachusetts Institute of Technology
www.mitportugal.org

“Design of railway track substructure modelling the long-term thermo-hydro-mechanical behaviour due to traffic and environmental actions”

The research was developed in the field of transportation and geoenvironmental engineering:

- Analysis of coupled THM processes in railway infrastructures with simulation of the impact of extreme environmental actions caused by climate change
- Formulation, FE implementation and validation of an elastic-viscoplastic constitutive model with isotropic and kinematic hardening suitable to model the cyclic behaviour and collapse of unsaturated soils due to environmental actions

2007 – 2009

Advanced Studies Diploma

TRANSPORTATION SYSTEMS

IST – UNIVERSITY OF LISBON
www.tecnico.ulisboa.pt

The specialization focused on three key domains: **Engineering and Project Management; Financing and Contracts; and Policy and Institutions.**

Main topics covered:

- Transport Policy and Institutions
- Business Models and Contracts
- Simulation Systems for Land-Use/Transport
- Research Methodologies in Social Sciences
- Risk and Decision Making
- Transport Demand Modelling
- Freight Transport and Logistics

2002 – 2007

MSc - Integrated Master Degree

CIVIL ENGINEERING

IST – UNIVERSITY OF LISBON
www.tecnico.ulisboa.pt

Some subjects covered:

- Transportation and Mobility
- Regional and Urban Planning
- Fundamentals of Spatial Planning
- Simulation and System Dynamics
- Management and Decision Analysis
- Operational Research
- Sustainable Development and Innovation



REFERENCES

“I have no doubts he is someone who can easily integrate in teams and quickly evolve into leading roles in those teams, always performing at high level”

José Manuel Viegas

Former Secretary General
International Transport Forum – OECD

“Extraordinary aptitude for understanding, formulating and solving complex research problems, along with outstanding work capabilities and sense of responsibility”

Paulo Fonseca Teixeira

Assistant Professor
Instituto Superior Técnico – Univ. Lisbon

“Tiago is among the best students I have been in contact. An exquisite personal relationship, empathy and attitude to face challenging scientific problems”

Sebastià Olivella

Full Professor | Dean
Technical University of Barcelona – UPC

“He has an excellent profile for team building, professional networking and leadership, namely within international contexts”

Luis Valadares Tavares

President
Foresight Observatory for Technology