

OVERVIEW

Dr. Riccardo Ferrari is a Marie Curie Alumnus and a Tenured Assistant Professor in Fault Tolerant Control in the Delft Center for Systems and Control, within the Faculty of Mechanical, Maritime, and Materials Engineering (3mE) at Delft University of Technology, The Netherlands.

His team investigates how to make dynamical systems safe and resilient against faults, malicious cyber-attacks and degradation phenomena, using model-based approaches that are robust against uncertainty. His research is applied to problems in wind energy, in the aerospace and in the automotive sectors, in particular for electric and for cooperative autonomous vehicles.

PERSONAL INFORMATION

Name Ferrari, Riccardo  <https://orcid.org/0000-0003-3615-5445>
Birth date 21/11/1979
Nationality Italian
Web site <http://www.dcsc.tudelft.nl/~riccardoferrari>

EDUCATION

2005 - 09 **PhD in Information Engineering**, Final thesis on “Distributed Fault Detection and Isolation of Large-scale Nonlinear Systems: an Adaptive Approximation Approach”. Supervisors: Prof. Thomas Parisini, Prof. Marios M. Polycarpou
[UNIV. OF TRIESTE](#), ITALY.
2000 - 05 **BA in Classical Piano**, Grade 109/110. Final thesis on “The Pianistic Touch: the Musician and the Physicist Point of View and a Computer Model”
“G. TARTINI” [CONSERVATORY OF MUSIC OF TRIESTE](#), ITALY.
1998 - 2004 **MSc in Electronic Engineering**, Grade 110/110 cum laude and honours. Final thesis on “The Acoustoelastic Effect in Pre-Stressed Metal Sheets: theoretical study, experimental detection and computer modelling with the Cell Method”
[UNIV. OF TRIESTE](#), ITALY.

CURRENT POSITION

2022 - **Tenured Assistant Professor**
[DELFT CENTER FOR SYSTEMS AND CONTROL/3ME/TU DELFT](#), THE NETHERLANDS.

PREVIOUS POSITIONS

2017 - 22 **Tenure Track Assistant Professor**
[DELFT CENTER FOR SYSTEMS AND CONTROL/3ME/TU DELFT](#), THE NETHERLANDS.
2015 - 17 **Postdoctoral Researcher**
[DELFT CENTER FOR SYSTEMS AND CONTROL/3ME/TU DELFT](#), THE NETHERLANDS.
2013 - 15 **R&D Executive Manager**
[DANIELI AUTOMATION](#), ITALY.
2008 - 13 **Junior R&D Engineer**
[DANIELI AUTOMATION](#), ITALY.

FELLOWSHIPS AND AWARDS

2021 **Best Paper Award**, Finalist
ASME ENERGY SYSTEMS TECHNICAL COMMITTEE, [ACC 2021](#).
2020 **Aerospace Industrial Benchmark on Fault Detection**, First Prize
AIRBUS, [IFAC WORLD CONGRESS 2020](#).
2018 **Paul M. Frank Award**, Honourable mention
IFAC, [SAFEPROCESS 2018](#).
2016 - 18 **Marie Skłodowska-Curie Individual Fellowship**, SURE: Safe Unmanned Robotic Ensembles
EUROPEAN COMMISSION, [GRANT NO. 707546](#).
2011 **Competition on Fault Detection and Fault Tolerant Control for Wind Turbines**, Second place
THE MATHWORKS AND K.K. ELECTRONICS, [IFAC WORLD CONGRESS 2011](#).

- 2005 **Giacomini Award**, Awarded to best Italian MSc thesis in Acoustics
[ITALIAN ACOUSTICS ASSOCIATION](#).

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

[DELFT CENTER FOR SYSTEMS AND CONTROL](#)/3ME/TU DELFT, NETHERLANDS

- 2021 - (25) **Mahmood Mirzakhali (PhD)**.
 2021 - (25) **Tushar Desai (PhD)**.
 2021 - (24) **Alex Gallo (Postdoc)**.
 2020 - (24) **Jean Gonzales Silva (PhD)**.
 2020 - (24) **Zhixin Feng (PhD)**.
 2020 - (24) **Atindriyo Kusumo Pamososuryo (PhD)**.
 2020 - 21 **Joeri Frederik (PhD, graduated)**, Co-supervisor.
 2018 - 21 **Yichao Liu (Postdoc)**.
 2018 - (22) **Twan Keijzer (PhD)**.
 2018 **Niloofar Jahanshahi (PhD)**.

[DANIELI AUTOMATION](#) AND [UNIV. OF TRIESTE](#), ITALY

- 2010 - 13 **Francesca Boem (PhD, graduated)**, Co-supervisor.

SUPERVISION OF UNDERGRADUATE STUDENTS

- 2021 - **11 MSc students**, Supervisor for their final MSc projects
[DELFT CENTER FOR SYSTEMS AND CONTROL](#)/3ME/TU DELFT, NETHERLANDS.
 2015 - 21 **30 MSc students, 12 BSc students**, Supervisor for their final MSc and BSc projects, respectively
[DELFT CENTER FOR SYSTEMS AND CONTROL](#)/3ME/TU DELFT, NETHERLANDS.
 2008 - 15 **6 MSc students**, Supervisor for their final MSc
[DANIELI AUTOMATION](#) AND [UNIV. OF TRIESTE](#), ITALY.

TEACHING ACTIVITIES

- 2022 **Organizer and Lecturer (PhD)**, “DISC Summer PhD School: Security and Resiliency for Cyber-Physical Systems - foundations and recent advances ”
[DELFT CENTER FOR SYSTEMS AND CONTROL](#)/3ME/TU DELFT, NETHERLANDS.
 2018 - **Lecturer (MSc)**, “Fault Diagnosis and Fault Tolerant Control”, obligatory specialization course
[DELFT CENTER FOR SYSTEMS AND CONTROL](#)/3ME/TU DELFT, NETHERLANDS.
 about 60 students
 2016 - **Lecturer (MSc)**, “Control Systems Laboratory”, obligatory specialization course
[DELFT CENTER FOR SYSTEMS AND CONTROL](#)/3ME/TU DELFT, NETHERLANDS.
 about 70 students

ORGANIZATION OF SCIENTIFIC MEETINGS

- 2022 **SafeProcess**, Proposer of pre-conference workshop on Security of Cyber-Physical Systems
[IFAC](#), PAFOS (CYPRUS), JUNE 7-10 2022.
 2021 **European Control Conference**, Organization of Invited Session on Security and Resiliency for Cyber-Physical Systems
[IEEE](#), [IFAC](#), ROTTERDAM (THE NETHERLANDS), JUNE 29-JULY 2 2020.
 2019 **15th IFAC Symposium on Large Scale Complex Systems**, National Organizing Committee
[IFAC](#), DELFT, MAY 26-28 2019.
 2018 **SafeProcess**, Organization of Invited Session on Safety and Privacy of Cyber Physical Systems
[IFAC](#), WARSAW, AUGUST 29-31 2018.

- 2018 **European Control Conference**, Organization of Invited Session on Safety, Security and Privacy of Cyber Physical Systems
[IEEE, IFAC](#), LIMASSOL (CYPRUS), AUGUST 29-31 2018.

EDITORIAL ACTIVITIES

- 2021 - **Moderator**, Electrical Engineering and Systems Science - Mathematics
[ARXIV](#).
- 2018 - **Associate Editor**, Conference Editorial Board
[IEEE CONTROL SYSTEMS SOCIETY \(CSS\)](#).
- 2015 - **Associate Editor**, Conference Editorial Board
[EUROPEAN CONTROL ASSOCIATION \(EUCA\)](#).
- 2005 - **Reviewer**, IEEE Trans. on Automatic Control, Automatica, Int. J. of Control, IEEE Trans. on Neural Networks and Learning Systems, IEEE Trans. on Signal Processing; Conf. on Decision and Control, American Control Conf., European Control Conf.
IEEE AND IFAC.

MEMBERSHIP OF SCIENTIFIC SOCIETIES

- 2015 - **Member**, Technical Committee 6.4 on Fault Detection, Supervision & Safety of Technical Processes
[IFAC](#).
- 2005 - **Member**, Control Systems Society
[IEEE](#).

RESEARCH VISITS AND INVITED TALKS

- 2021 **Sparse model identification**, with Kausihan Selvam
[AB VOLVO](#), SWEDEN.
- 2021 **The dual role of uncertainty**, with Prof. Henrik Sandberg
[KTH STOCKHOLM](#), SWEDEN.
- 2021 **Safety and Security**, with Prof. K.G. Robbersmyr
[UNIV. OF AGDER](#), NORWAY.
- 2019 **Anomaly detection for cooperative vehicles**, with Prof. J.M. Maestre
[UNIV. OF SEVILLE](#), SPAIN.
- 2019 **Sliding mode anomaly detection**, with Fabian Jarmolowitz
[BOSCH RESEARCH](#), GERMANY.
- 2018 **Distributed Fault Diagnosis**, with Prof. Claudio de Persis
[UNIV. OF GRONINGEN](#), NETHERLANDS.
- 2017 **Distributed Cyber-attack Detection**, with Prof. Michel Kinnaert
[UNIV. LIBRE DE BRUXELLES](#), BELGIUM.
- 2017 **Distributed Fault Diagnosis and Cyber-attack Detection in Large-Scale Systems**, with Prof. Ali Karimoddini
[NORTH CAROLINA A&T STATE UNIVERSITY](#), USA.
- 2017 **Graduate school seminar on fault diagnosis**, with Dr. Daniele Casagrande
[UNIV. OF UDINE \(IT\)](#), ITALY.
- 2016 **Fault diagnosis of smart buildings**, with Ondrej Holub
[HONEYWELL LABS PRAGUE](#), CZECH REPUBLIC.
- 2013 **Distributed Fault Diagnosis**, with Alexandru Caracas
[IBM RESEARCH ZURICH](#), SWITZERLAND.
- 2013 **Algebraic methods**, with Prof. T. Parisini
[IMPERIAL COLLEGE LONDON](#), UK.

INSTITUTIONAL RESPONSIBILITIES

- 2021 - **Member**, Faculty-wide Commission on Frauds
[DELFT CENTER FOR SYSTEMS AND CONTROL/3ME/TU DELFT](#), THE NETHERLANDS.
- 2020 - **Member**, Board of Examiners
[DELFT CENTER FOR SYSTEMS AND CONTROL/3ME/TU DELFT](#), THE NETHERLANDS.
- 2019 **Expert**, serving as reviewer for MSCA grant applications
EUROPEAN COMMISSION, BRUXELLES, BELGIUM.
- 2018 - 19 **Expert**, serving as reviewer for grant applications
[VLAANDEREN AGENTSCHAP INNOVEREN & ONDERNEMEN](#), BRUXELLES, BELGIUM.

TRAINING AND CAREER DEVELOPMENT

- 2020 **Personal Development Program**, Career development course for Tenure Trackers
[DELFT CENTER FOR SYSTEMS AND CONTROL/3ME/TU DELFT](#), THE NETHERLANDS.
- 2017 - 19 **University Teaching Qualification**
[DELFT CENTER FOR SYSTEMS AND CONTROL/3ME/TU DELFT](#), THE NETHERLANDS.

Appendix 1: Previous and ongoing funding

As a TU Delft researcher, I contributed to secure a total of 1.9 M€ of public and private funding for my Department, of which 1.5 M€ in currently active projects.

Previous grants

<i>Title</i>	<i>Funding Source</i>	<i>Amount (own)</i>	<i>Period</i>	<i>Role</i>	<i>Project Goal</i>
D3P	3mE, Cohesion grant	60 k€	10/2018 - 9/2019	Co-PI	Investigation of diagnosis and prognosis of structural damages in offshore structures.
SURE	EU, MSCA	177 k€	9/2016 - 9/2018	PI	Deriving distributed fault diagnosis methods for cooperative autonomous robotic vehicles.
EDOWE	EU, MSCA	176 k€	10/2019 - 9/2021	Host	Application of advanced control methods to offshore wind turbines to decrease their cost of energy. Grantee: Dr. Yichao Liu.

On-going Grants

<i>Title</i>	<i>Funding Source</i>	<i>Amount (own)</i>	<i>Period</i>	<i>Role</i>	<i>Project Goal</i>
SPARSITY	Volvo AB	600 k€	1/2021 - 12/2024	PI	Using sparse data for implementing predictive maintenance of electric heavy vehicles.
AIMWIND	Research Council of Norway	1.55 M€ (328 k€)	1/2021 - 12/2023	Co-PI	Optimization of the longevity and profitability of offshore wind farms via health-aware control.
WATEREYE	EU, H2020	4.7 M€ (590 k€)	11/2019 - 10/2022	Co-PI	Deriving fault tolerant control laws for offshore wind farms subjected to corrosion degradation.

*Appendix 2: Publication output***A. Bibliometrics and summary of publication activities**

I have (co-)authored so far **62 scientific peer-reviewed publications, of which 27 in the years 2020-22**. They have been featured in 8 flagship journals and 10 conference series in the disciplines of Automatic Control, Robotics and Renewable Energies. I have (co-)authored 16 scientific journal articles and 46 conference papers. I am the first editor of a book published by Springer Nature, and wrote 4 book chapters.

According to [Google Scholar](#) (GS) **my works have been cited 1107 times and my h-index is 16** at the time of writing. Bibliometrics data provided by [Scopus](#) (SC), instead, amounts to 801 citations (698 excluding my self citations, 562 excluding self citations from all authors) and my h-index is 13.