

OVERVIEW

Dr. Riccardo Ferrari is a Marie Curie Alumnus and an Associate 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

2023 - **Associate Professor**
[DELFT CENTER FOR SYSTEMS AND CONTROL/3ME/TU DELFT](#), THE NETHERLANDS.

PREVIOUS POSITIONS

2017 - 2023 **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

2023 **O. Hugo Schuck Award**, Co-recipient
 AMERICAN AUTOMATIC CONTROL COUNCIL, [ACC 2023](#).
 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

2018 - 23 **Twan Keijzer (PhD, graduated)**, Co-promotor.

2020 - 21 **Joeri Frederik (PhD, graduated)**, Co-promotor, I started when the other co-promotor, Prof. Verhaegen, went on sabbatical.

2021 - (25) **Tushar Desai (PhD)**, Co-promotor.

2020 - (24) **Jean Gonzales Silva (PhD)**, Co-promotor.

2020 - (24) **Zhixin Feng (PhD)**, Co-promotor.

2020 - (24) **Atindriyo Kusumo Pamososuryo (PhD)**, Co-promotor.

2023 - (26) **Wolfram Martens (Postdoc)**, Supervisor.

2021 - (24) **Alex Gallo (Postdoc)**, Supervisor.

2018 - 21 **Yichao Liu (Postdoc)**, Supervisor.

2021 - 22 **Mahmood Mirzakhilili (PhD)**, Co-promotor, student dropped to pursue a new job.

2018 **Niloofar Jahanshahi (PhD)**, Co-promotor, student dropped for personal reasons.

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

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

SUPERVISION OF UNDERGRADUATE STUDENTS

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

2015 - **45 MSc students, 16 BSc students**, Supervisor for their final MSc and BSc projects, respectively.

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

2008 - 15 **6 MSc students**, Supervisor for their final MSc.

TEACHING ACTIVITIES

2022 **Organizer and Lecturer (PhD)**, “DISC Summer PhD School: Security and Resiliency for Cyber-Physical Systems - foundations and recent advances ”.

2023 - **Lecturer (MSc)**, “Modelling of Dynamical Systems”, obligatory course for Systems and Control program.

2018 - **Lecturer (MSc)**, “Fault Diagnosis and Fault Tolerant Control”, elective course for Systems and Control program.
about 60 students

2016 - 23 **Lecturer (MSc)**, “Control Systems Laboratory”, obligatory/elective course for different programs at 3mE and EWI.
about 70 students

ORGANIZATION OF SCIENTIFIC MEETINGS

- 2023 **CDC**, Organization of Invited Session on Security, Resilience, and Privacy for Cyber-physical Systems
[IEEE](#), SINGAPORE, DECEMBER 13-15 2022.
- 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](#).

MAJOR COLLABORATIONS

International, Prof. Thomas Parisini – Fault diagnosis, [IMPERIAL COLLEGE LONDON](#); Prof. Marios Polycarpou – Fault Diagnosis, [UNIV. OF CYPRUS](#); Prof. Nick Hawes – Active Inference, [UNIV. OF OXFORD](#); Prof. Jerome Le Ny – Differential Privacy, [UNIV. POL. MONTREAL](#); Prof. J.M. Maestre – Coalitional Control, [UNIV. OF SEVILLE](#); Dr. A.H. Teixeira – Cyber-attack detection, [UPPSALA UNIV.](#); Prof. Henrik Sandberg – Security for Cyber Physical Systems, [KTH STOCKHOLM](#).

National, Dr. Carlos Murguia – Cyber-attack detection, organization of DISC Summer PhD School [TU EINDHOVEN](#); Dr. Michelle Chong – Cyber-attack detection, organization of DISC Summer PhD School [TU EINDHOVEN](#).

TUD, Dr. Carlos Hernandez Corbato – Active Inference for robotic control [COGNITIVE ROBOTICS](#); Dr. Gautham Ram Chandra Mouli – Lithium-ion batteries for automotive traction [DC SYSTEMS, ENERGY CONVERSION AND STORAGE](#).

DCSC, Prof. Jan-Willem van Wingerden – Control for wind energy; Prof. Michel Verhaegen – Co-supervision of one PhD student on the topic of System Identification; Prof. Tamas Keviczky – Differential Privacy.

Industrial, Fabian Jarmolowitz – Cooperative Self Driving Vehicles, [BOSCH RESEARCH](#); Kausi-han Selvam – Electric Powertrains, [VOLVO](#); Dr. Philippe Goupil – Fault Diagnosis for Aerospace applications, [AIRBUS](#); Ondrej Holub – Electric Powertrains, [PORSCH](#).

RESEARCH VISITS AND INVITED TALKS

- 2022 **Safety and Resiliency**, with Dr. Hampei Sasahara
[TOKYO TECH](#), SWITZERLAND.
- 2022 **Safety and Resiliency**, with Prof. G. Ferrari-Trecate
[EPFL](#), SWITZERLAND.
- 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 LargeScale 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.