

# Stefano Longo

PhD, SMIEEE, MIET, CEng, FHEA



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## SUMMARY

I'm an internationally recognised expert in Artificial Intelligence for transport, specialising in algorithms for decision making that have wide applications, from battery management systems to autonomous driving.

I've won and managed over 25 R&D projects for a total value of approximately £30m. I'm regularly invited to give talks at international conferences and trade shows. I'm an inventor on 12 patents, and published 2 books and over 90 scientific articles.

## CURRENT POSITIONS

- Since 2022      **Head of intellectual Property**, [Embotech AG](#), Switzerland
- Since 2020      **Reader (Associate Professor)** in Automated Vehicles, [Cranfield University](#), UK
- Research for autonomous driving and AI technologies; managing of multi-million R&D projects; developing and teaching post-graduate modules, supervision of PhD and MSc research projects
- Since 2023      **External Examiner**, University of Bath, UK
- Since 2017      **Director**, Fasteon Ltd (reg no. 10641469)
- Technical consulting company, registered in the UK

## EDUCATION

- 2007-2010      **PhD in Control Systems & Automation**, University of Bristol, UK
- IET award winning thesis: Optimal and Robust Scheduling for Networked Control Systems  
                    Industrial collaborator: Jaguar Land Rover
- 2006-2007      **MSc in Control Systems** (Distinction), University of Sheffield, UK
- 2012-2015      **PGCert in Academic Practice**, Cranfield University, UK

2002-2006 **CEng Electrical and Electronic Engineering** (First Class), Sheffield Hallam University, UK

## PREVIOUS POSITIONS

Since 2019 **Head of Vehicle Automation**, [Embotech AG](#), Switzerland

Product manager and head of the business unit. Team of 20 people.

2018-2019 **Course Director** for the MSc in [Advanced Motorsport Mechatronics](#)  
2014-2019 **Course Director** for the MSc in [Automotive Mechatronics](#)

Advanced Vehicle Engineering Centre, Cranfield University, UK

2017-2020 **Senior Lecturer** in Vehicle Electronic Systems, Cranfield University, UK  
2012-2017 **Lecturer** in Vehicle Electronic Systems, Cranfield University, UK

2012-2016 **Honorary Research Associate** at Imperial College London, UK

Collaboration with the Electrical and Electronic Engineering department on model predictive control and numerical real-time optimization techniques

2010-2012 **Research Associate** at Imperial College London, UK

Department of Electrical and Electronic Engineering  
Working on an EPSRC and FP7 EU project on numerical real-time optimization techniques

2018-2020 **Business Fellow** at the Connected Places Catapult

2016-2020 **External examiner** for the Faculty of Engineering and Informatics at the University of Bradford, UK

2008-2011 **Teaching Support Assistant** at University of Bristol, UK

Department of Mechanical Engineering

## OTHER APPOINTMENTS

Since 2016 Full Member of the **EPSRC Associate Peer Review College**

Since 2015 **Assessor** for **Innovate UK** funding applications  
**Assessor** for **EPSRC** funding proposals  
**PhD external examiner** for **13 students** at University of Oxford (2016), Warwick University (2018, 2021, 2022 x 2) Coventry University (2016, 2022), University of Bristol (2017), University of Sheffield (2017), University Federico II (2019) University of Bath (2022), University of Surrey (2023), University of Sussex (2023).

## RESEARCH GRANTS WON AND MANAGED

2024-2027	European Framework Programme ( <b>€6.3m</b> total, <b>255k</b> received). Project "ICONIC" (Smart, Aware, Integrated Wind Farm Control Interacting with Digital Twins)
2023-2026	Swiss European Innovation Council Accelerator ( <b>€3.4m</b> ). Project "TruckSAFELYO"
2023-2024	Eureka Eurostars grant, autonomous logistics ( <b>€2.2m</b> ). Project "DALCUIIS"
2022-2023	<b>EIC Accelerator</b> EU grant, transport energy management ( <b>€700k</b> )
2019-2021	<b>H2020 SME</b> EU grant. Autonomous vehicle motion planning ( <b>€2.8m</b> )
2018-2020	<b>EPSRC</b> DTP for PhD studentship (total awarded £73)
2018-2020	<b>Co-Investigator</b> for CAV3 Innovate UK project "AID-CAV" (total awarded <b>£4.4m</b> , amount received <b>£478k</b> )
2018-2019	<b>Principal Investigator</b> for CAV3 Innovate UK project "CORAM" (total awarded <b>£150</b> , amount received <b>£49k</b> )
2017-2020	<b>Co-Investigator</b> for CAV2 Innovate UK project "HumanDRIVE" (total awarded <b>£14m</b> , amount received <b>£1.2m</b> )
2017-2018	<b>Co-Investigator</b> for the CAV2 Innovate UK "Project Alloyed" (total awarded <b>£229k</b> , amount received <b>£44k</b> )
2017-2018	<b>Principal Investigator</b> for the EPSRC IAA project "Optimal thermal management of electric trucks batteries" EP/R511511/1 (total awarded <b>£33k</b> )
2017-2018	<b>Principal Investigator</b> for the EPSRC Global Challenge research fund "Hardware-in-the-loop test rig for dual energy source electric vehicles" EP/R51262X/1 (total awarded <b>£13k</b> )
2016-2019	<b>Co-Investigator</b> for Innovate UK ATI "Zephyr Innovation Programme" (total awarded <b>£3.6m</b> , amount received <b>£245k</b> )
2016-2017	<b>Principal Investigator</b> for the EPSRC Global Challenge research fund "Development of a controllable DC-DC converter for dual energy source electric vehicles" (total awarded <b>£30k</b> )
2016-2019	2 Industrially funded PhD studentship (total awarded <b>£330k</b> )
2015-2019	<b>Co-Investigator</b> for the H2020-NMPI7-GV-2014 "Advanced Lithium Sulphur battery for xEV (ALISE)"
2015	<b>Principal Investigator</b> for the EPSRC IAA project "Reconfigurable test rig for electric vehicle powertrain optimization" EP/K503927/1 (total awarded <b>£57k</b> )
2013-2017	<b>Co-Investigator</b> for the Innovate UK IDP9 project "REVB" (EPSRC grant EP/L505298/1, total awarded <b>£2.5m</b> , amount received <b>£0.5m</b> )
2012-2016	<b>Co-Investigator</b> and Cranfield's work package leader for the EPSRC project "Developing FUTURE Vehicles" EP/L505286/1 (total awarded <b>£3m</b> , amount received <b>£700k</b> )

## SUPERVISION

Over 85 MSc students, 9 PhD students, 6 post-doctoral fellows

## ORGANIZATION OF SCIENTIFIC MEETINGS

- **Chair** of the Industrial Day at the UKACC International Conference on Control 2018
- **Chair** of the postgraduate workshop for the IFAC Mechatronics Systems Symposium 2016
- **Special Session Chair** of the UKACC International Conference on Control 2016
- Organizer of the **special session in "Automotive Control"** at the CONTROL 2014 Conference
- Co-organizer of the **IEEE/InstMC Automotive Mechatronic Day**, Cranfield Nov 2014
- Organizer of the 3rd annual **International Symposium** on Sustainable Mobility (2013-15)

## INSTITUTIONAL RESPONSIBILITIES

- Elected **member of the Senate** and **the Court** of Cranfield University
- **Faculty member**, Cranfield University

## CURRENT COMMISSIONS OF TRUST

- Technical Steering Committee member – [Autoware Foundation](#)
- **Associate Editor** for IFAC (International Federation of Automatic Control)
- **Guest Editor** for the journal Energies
- Nominated member of the **IFAC technical committee** on Automotive Control (TC 7.1) and on Mechatronic Systems (TC 4.2)
- **Technical editor** for the Journal of Sustainable Mobility (Greenleaf Publishing)
- **Reviewer** for Springer's books
- **Reviewer** for the Journals: Automatica, Control Engineering Practice (Elsevier), Control Theory and Applications (IET), Transactions on Mechatronics (IEEE), Automotive Engineering (IMechE), Optimal Control Applications and Methods (Wiley)
- **Reviewer** for IEEE Control and Decision Conference and other international conferences

## PAST COMMISSIONS OF TRUST

- Elected **Executive Committee Member** of the UK Automatic Control Council (UKACC), a national member organization of the International Federation of Automatic Control (IFAC)
- Member of the **Science Board** of the Energy Storage SuperGen Hub
- Member of the **International Program Committee** of the 2015 15th International Conference on Control, Automation, and Systems (ICCAS 2015), BEXCO, Busan, Korea
- **Associate Editor** for the Elsevier Journal Mechatronics
- Nominated executive member of the **IET Control & Automation Network**
- Nominated executive member of the **IET Automotive & Road Transport Systems Network**

## INVITED TALKS

- **International VDI Conference Commercial Vehicles 2023**– “Mission Management for Commercial Vehicles”, Baden-Baden, Germany, 15 June 2023
- **ETH Zurich** – “Industrial applications of model predictive control”. Zurich, 2022 and 2023
- **IBIS Global Summit** – “An insight into the latest ADAS technologies”. Monaco, 2020
- **Autonomous Vehicle Tech Expo** on “vehicle dynamics in motion planning and control”. Detroit, 2019
- **University California Davies** workshop on ‘Implementation of Automotive Control Systems’, USA, May 2018
- Vehicle Dynamics and Control Seminar, **University of Cambridge**, Cambridge, UK, Mar 2017
- **IEEE Workshop** on “Electric vehicle optimization and control”, University of Colombo, Sri Lanka, Dec 2016
- Workshop on Control, Optimisation and Networks, **University of Cambridge**, Cambridge, UK, Sep 2016
- **Driverless technology conference** and exhibition, London, UK, Nov 2015
- Tsinghua University, ‘Interior point methods for predictive control’, **Beijing**, China, May 2014
- **Imperial College London**, ‘Robust scheduling for networked control systems’, London, UK, Jun 2011
- **Beijing** Institute of Technology, ‘Networked control systems: optimizing performance using biologically inspired algorithms’, Beijing, PR China, Oct 2010
- Kunming University of Science and Technology, ‘Vibration control using decentralized architectures’, Kunming, PR **China**, Oct 2010

## TEACHING EXPERIENCE

Since 2012	Module leader for 'Mechatronics Modelling for Vehicle Systems' and 'Embedded Vehicle control systems' and contributor to modules 'Advanced control and optimization', 'Vehicle data acquisition and instrumentation' and 'Vehicle electrification and hybridization'
2010-12	Producing teaching material and delivering course on 'Predictive control', 'Control systems' and 'Circuits'

## OTHER INDUSTRIAL EXPERIENCE

2005	Project engineer at P. Ducker Systems limited, UK  Programming and configuration of PLCs for the development of Heathrow Terminal 5 SCADA system
2004-2005	Student Engineer at CSE-Servelec Limited, UK  Implementation of telemetry and SCADA systems for the Environment Agency

## MEMBERSHIP OF SCIENTIFIC SOCIETIES

- **Senior Member** of the IEEE
- Member of the IET and **Chartered Engineer** (CEng)
- **Fellow** of the Higher Education Academy

## PATENTS

1. Title: Control system for steering automated vehicles using heterogeneous redundancy checks. Filing date: **25/10/23**. Application number: EP23205896
2. Title: Safe orchestration of electromechanical actuators of a drive-by-wire system of an automated vehicle. Filing date: **05/09/23**. Application number: EP23195527.9
3. Title: Autonomous vehicles using heterogeneous redundancy checks. Filing date: **28/07/23**. Application Number: EP23188480.0
4. Title: Steering automated vehicles in a designated area thanks to movable sensors such as sensor robots configured as ground vehicles. Filing date: **23/12/22**. Application number: EP22216503.7
5. Title: Real-time energy-efficient computations of optimal road vehicle velocity profiles. Filing date: **22/10/21**. PCT Application Number: PCT/EP2020/079814
6. Title: Recursive, real-time capable, interaction-aware methods of planning motions for autonomous vehicles. Filing date: **10/07/20**. PCT Application Number: PCT/EP2020/069674
7. Title: Method and system and method for controlling autonomous or semi-autonomous vehicle. Filing date: **27/03/20**. EPA Application Number: EP 20 166 258.2
8. Title: Autonomous vehicles using heterogeneous redundancy checks. Filing date: **28/07/23**. Application number: EP23188480.0
9. Safety path interpolation
10. Title: Safe orchestration of electromechanical actuators of a drive-by-wire system of an automated vehicle. Filing date: **05/09/23**. Application number: EP23195527.9

## SELECTED PUBLICATIONS

### Journals

1. Abdullahi, I., Longo, S., Samie, M. (2024). Towards a Distributed Digital Twin Framework for Predictive Maintenance in Industrial Internet of Things. *MDPI Sensors*. [https://susy.mdpi.com/user/manuscripts/review\\_info/879c62790d02d4ae3e7eb34cf9d70b37](https://susy.mdpi.com/user/manuscripts/review_info/879c62790d02d4ae3e7eb34cf9d70b37)
2. Lin, C., Li, B., Siampis, E., Longo, S., Velenis, E. (2024). Predictive Path-Tracking Control of an Autonomous Electric Vehicle with Various Multi-Actuation Topologies. *MDPI Sensors*. <https://www.mdpi.com/1424-8220/24/5/1566>
3. Li, B. Lin, C., Ahmadi, J., Siampis, E., Longo, S., Velenis, E. (2023). An integrated path-tracking and control allocation method for autonomous racing electric vehicles. *Vehicle System Dynamics*. <https://www.tandfonline.com/doi/full/10.1080/00423114.2023.2242533>
4. Papaioannou, G., Htike, Z., Lin, C., Siampis, E., Longo, S., Velenis, E. (2022). Multi-Criteria Evaluation for Sorting Motion Planner Alternatives. *MDPI Sensors*. <https://www.mdpi.com/1424-8220/22/14/5177>
5. Htike, Z., Papaioannou, G., Siampis, E., Velenis, E., Longo, S. (2021). Fundamentals of motion planning for mitigating motion sickness in automated vehicles. *IEEE Trans. Vehicular Technology*. <https://ieeexplore.ieee.org/document/9664243>
6. Stryszowski, M., Longo, S., D. Velenis, D., Forostovsky, G. (2021). A framework for Self-enforced interaction between connected vehicles: intersection management scheme. *Journal of Intelligent Transport Systems*. <https://ieeexplore.ieee.org/abstract/document/9107464>
7. Propp, K., Auger, J. D., Fotouhi, A., Marinescu, M., Knap, V., Longo, S. (2019). Improved state of charge estimation for lithium-sulfur batteries (2019). *Journal of Energy Storage*. <https://www.sciencedirect.com/science/article/abs/pii/S2352152X18304730>
8. Morganti, M., Longo, S., Tirovic, M., Blaise, C.Y. & Forostovsky, G. (2019). Multi-scale, electro-thermal model of NMC battery cell. *IEEE Transaction on Vehicle Technology*. <https://ieeexplore.ieee.org/document/8846105>
9. Fotouhi, A., Auger, D. J., Propp, K., & Longo, S. (2018). Lithium-Sulfur Battery State-of-Charge Observability Analysis and Estimation. *IEEE Transactions on Power Electronics* <https://ieeexplore.ieee.org/document/8052518>
10. Siampis, E., Gariuolo, S., Velenis, E., & Longo, S. (2018). A Real-Time Nonlinear Model Predictive Control Strategy for Stabilisation of an Electric Vehicle at the Limits of Handling. *IEEE Trans. Control Systems Technology* <https://ieeexplore.ieee.org/document/8061009>
11. Fotouhi, A., Propp, K., Samaranayake, L., Auger, D. J., & Longo, S. (2018). A hardware-in-the-loop test rig for development of electric vehicle battery identification and state estimation algorithms. *Int. J. of Powertrains*, 7(1/2/3), 227–248. <https://doi.org/10.1504/IJPT.2018.10011459>
12. Abir, J., Longo, S., Morantz, P., & Shore, P. (2017). Virtual metrology frame technique for improving dynamic performance of a small size machine tool. *Precision Engineering*, 48, 24–31. <https://doi.org/https://doi.org/10.1016/j.precisioneng.2016.11.002>
13. Basrah, M. S., Siampis, E., Velenis, E., Cao, D., & Longo, S. (2017). Wheel Slip Control with Torque Blending using Nonlinear Model Predictive Control. *Vehicle Systems Dynamics*, 55(11), 1665–1685. <https://doi.org/https://doi.org/10.1080/00423114.2017.1318212>
14. Tavernini, D., Velenis, E., & Longo, S. (2017). Feedback brake distribution control for minimum pitch. *Vehicle System Dynamics*, 55(6), 902–923. <https://doi.org/doi.org/10.1080/00423114.2017.1293275>
15. Fotouhi, A., Auger, D. J., Propp, K., & Longo, S. (2017). Electric Vehicle Battery Parameter Identification and SOC Observability Analysis: NiMH and Li-S Case Studies. *IET Power Electronics*, 10(11), 1289–1297. <https://doi.org/10.1049/iet-pel.2016.0777>
16. Fotouhi, A., Auger, D. J., Propp, K., Longo, S., Purkayastha, R., O'Neill, L., & Walus, S. (2017). Lithium-Sulfur Cell Equivalent Circuit Network Model Parameterization and Sensitivity Analysis. *IEEE Transactions on Vehicular Technology*, 66(9), 7711–7721. <https://doi.org/10.1109/TVT.2017.2678278>
17. Samaranayake, L., & Longo, S. (2017). Degradation Control for Electric Vehicle Machines using Nonlinear Model Predictive Control. *IEEE Transaction on Control Systems Technology*, 26(1), 89–101. <https://doi.org/10.1109/TCST.2016.2646322>

18. Propp, K., Auger, D. J., Fotouhi, A., Longo, S., & Knap, V. (2017). Kalman-variant estimators for state of charge in lithium-sulfur batteries. *Journal of Power Sources*, 343, 254–267. <http://dx.doi.org/10.1016/j.jpowsour.2016.12.087>
19. Propp, K., Marinescu, M., Auger, D. J., O'Neill, L., Fotouhi, A., Somasundaram, K., Offer G. J., Minton, G., Longo, S., Knap, V. (2016). Multi-temperature state-dependent equivalent circuit discharge model for lithium-sulfur batteries. *Journal of Power Sources*, 328, 289–299. <http://dx.doi.org/10.1016/j.jpowsour.2016.07.090>
20. Fotouhi, A., Auger, D. J., Propp, K., & Longo, S. (2016). Accuracy versus Simplicity in Online Battery Model Identification. *IEEE Trans. On Systems, Man and Cybernetics*, PP(99), 1–12. <http://doi.org/10.1109/TSMC.2016.2599281>
21. Abir, J., Longo, S., Morantz, P., & Shore, P. (2016). Optimized estimator for real-time dynamic displacement measurement using accelerometers. *Mechatronics*, 39, 1–11. <http://doi.org/10.1016/j.mechatronics.2016.07.003>
22. Propp, K., Marinescu, M., Auger, D. J., O'Neill, L., Fotouhi, A., Somasundaram, K., Offer G. J., Minton, G., Longo, S., Wild, M., Knap, V. (2016). Multi-temperature state-dependent equivalent circuit discharge model for lithium-sulfur batteries. *Journal of Power Sources*, 328, 289–299. <http://doi.org/10.1016/j.jpowsour.2016.07.090>
23. Abir, J., Longo, S., Morantz, P., & Shore, P. (2016). Optimized estimator for real-time dynamic displacement measurement using accelerometers. *Mechatronics*, 39, 1–11. <http://doi.org/10.1016/j.mechatronics.2016.07.003>
24. Suardi, A., Stefano Longo, Kerrigann, E. C., & Constantinides, G. A. (2016). Explicit MPC: Hard constraint satisfaction under low precision arithmetic. *Control Engineering Practice*, 47, 60–69. <http://doi.org/10.1016/j.conengprac.2015.12.005>
25. Fotouhi, A., Auger, D. J., Propp, K., Longo, S., & Wild, M. (2016). A review on electric vehicle battery modelling: From Lithium-ion toward Lithium-Sulphur. *Renewable & Sustainable Energy Reviews*, 56, 1008–1021. <http://doi.org/doi:10.1016/j.rser.2015.12.009>
26. Siampis, E., Velenis, E., & Longo, S. (2015). Rear wheel torque vectoring model predictive control with velocity regulation for electric vehicles. *Vehicle System Dynamics*, 53(11), 1555–1579. <http://doi.org/10.1080/00423114.2015.1064972>
27. Liu, Y., van Schijndel, J., Longo, S., & Kerrigan, E. C. (2015). UAV Energy Extraction with Incomplete Atmospheric Data Using MPC. *IEEE Trans. on Aerospace and Electronic Systems*, 51(2), 1203–1215. <http://doi.org/10.1109/TAES.2014.130657>
28. Auger, D. J., Maxime, F. G., Mohan, G., Longo, S., & Assadian, F. (2014). Impact of Battery Ageing on an Electric Vehicle Powertrain Optimisation. *Journal of Sustainable Development of Energy, Water and Environment Systems*, 2(4), 350–361. <http://doi.org/http://dx.doi.org/10.13044/j.sdewes.2014.02.0028>
29. Longo, S., Kerrigan, E. C., & Constantinides, G. A. (2014). Constrained LQR for Low-Precision Data Representation. *Automatica*, 50(1), 162–168. <http://doi.org/http://dx.doi.org/10.1016/j.automatica.2013.09.035>
30. Stefano Longo, Auger, D. J., & Assadian, F. (2014). Mechatronics in Sustainable Mobility: two electric vehicle applications. *Journal of Sustainable Mobility*, 1(1), 19–36. <http://doi.org/http://dx.doi.org/10.9774/GLEAF.2350.2014.00004>
31. Papazoglou, A., Longo, S., Auger, D., & Assadian, F. (2014). Nonlinear filtering techniques comparison for battery state estimation. *Journal of Sustainable Development of Energy, Water and Environment Systems*, 2(3), 259–269. <http://doi.org/http://dx.doi.org/10.13044/j.sdewes.2014.02.0021>
32. Mohan, G., Assadian, F., & Longo, S. (2013). An Optimization Framework for Comparative Analysis of Multiple Vehicle Powertrains. *Energies*, 6(10), 5507 – 5511. <http://doi.org/10.3390/en6105507>
33. Longo, S., Herrmann, G., & Barber, P. (2012). Robust scheduling of sampled-data networked control systems. *IEEE Transaction on Control Systems Technology*, 20(6), 1613 – 1621. <http://doi.org/10.1109/TCST.2011.2170172>
34. Su, T., Longo, S., Herrmann, G., & Barber, P. (2012). Computation of an optimal communication schedule in a nonlinear networked control system using sum-of-squares. *Systems & Control Letters*, 61(3), 387 – 396. <http://doi.org/10.1016/j.sysconle.2011.12.006>
35. Longo, S., Kerrigan, E. C., Ling, K. V., & Constantinides, G. A. (2011). A parallel formulation for predictive control with nonuniform hold constraints. *Annual Reviews in Control*, 35(2), 207–

214. <http://doi.org/10.1016/j.arcontrol.2011.10.008>
36. Longo, S., Herrmann, G., & Barber, P. (2010). Stabilizability and detectability in networked control. *IET Control Theory & Applications*, 4(9), 1612–1626. <http://doi.org/10.1049/iet-cta.2009.0234>

## Books

1. Ehsani, M., Gao, Y., Longo, S., & Ebrahimi, K. (2018). *Modern Electric, Hybrid Electric, and Fuel Cell Vehicles: Fundamentals, Theory, and Design*, 3rd Edition, CRC Press, Taylor & Francis Group. <https://www.crcpress.com/Modern-Electric-Hybrid-Electric-and-Fuel-Cell-Vehicles-Third-Edition/Ehsani-Gao-Longo-Ebrahimi/p/book/9781498761772>
2. Longo, S., Su, T., Herrmann, G., & Barber, P. (2013). *Optimal and Robust Scheduling for Networked Control Systems*. CRC Press, Taylor & Francis Group. <http://books.google.com/books?hl=en&lr=&id=nSmpeXMrLTsC&pgis=1>
3. Marco, J., Truong, D.Q., Longo, S. (2020). *Energy Storage and Management for Electric Vehicles*. Energies, MDPI. <https://doi.org/10.3390/books978-3-03921-863-9>

## Book chapters

1. Morganti, M. V., Longo, S., Tirovic, M., Auger, D. J., & Shah, M. (2018). Modular Battery Cell Model for Thermal Management Modelling. In K. Jármai & B. Bolló (Eds.), *Vehicle and Automotive Engineering 2. VAE 2018. Lecture Notes in Mechanical Engineering* (pp. 87–102). Springer, Cham. [https://doi.org/https://doi.org/10.1007/978-3-319-75677-6\\_8](https://doi.org/https://doi.org/10.1007/978-3-319-75677-6_8)
2. Fotouhi, A., Propp, K., Auger, D. J., & Longo, S. (2018). State of Charge and State of Health Estimation Over the Battery Lifespan. In G. Pistoia & B. Liaw (Eds.), *Behaviour of Lithium-Ion Batteries in Electric Vehicles* (pp. 267–288). Springer. Retrieved from <http://www.springer.com/gb/book/9783319699493>

## Peer-reviewed conferences

1. Htike, Z., Papaioannou, G., Siampis, E., Velenis, E., Longo, S. (2020). Motion Sickness Minimisation in Autonomous Vehicles Using Optimal Control (2020). *RAAD: International Conference on Robotics in Alpe-Adria Danube Region. Advances in Service and Industrial Robotics*. <https://link.springer.com/book/10.1007/978-3-030-48989-2>
2. Htike, Z., Papaioannou, G., Velenis, E., Siampis, E., Longo, S. (2020). Minimisation of Motion Sickness in Autonomous Vehicles. *2020 IEEE Intelligent Vehicles Symposium*. <https://ieeexplore.ieee.org/document/9304739>
3. Li, B., Ahmadi, J., Lin, C., Siampis, E., Longo, S., Velenis, S. (2020). Integrated Path-tracking and Control Allocation Controller for Autonomous Electric Vehicle under Limit Handling Condition. *2020 IEEE Intelligent Vehicle Symposium*. <https://ieeexplore.ieee.org/document/9304608>
4. Htike, Z., Papaioannou, G., Velenis, E., Longo, S. (2020). Motion planning of self-driving vehicles for motion sickness minimization. *2020 European Control Conference*. <https://ieeexplore.ieee.org/document/9143789>
5. Li, B., Siampis, E., Lin, C., Longo, S., Velenis, S. (2019). A time-efficient integrated path-tracking and control allocation method for autonomous electric vehicle. *2019 Conference on Decision and Control*. <https://ieeexplore.ieee.org/document/9029516>
6. Morganti, M.V., Longo, S., Shah, R.M.B.R (2018). A flexible, re-configurable electro-thermal battery cell model. *FISITA World Automotive Congress*. <https://www.fisita.com/store/papers/F2018S/F2018S-EHV-137>
7. Cha, E.S., Kim, K.-E., Longo, S. Mehta, A. (2018). OP-CAS: Collision Avoidance with Overtaking Maneuvers. In 21<sup>st</sup> International Conference on Intelligent Transportation Systems (ITSC) <https://ieeexplore.ieee.org/abstract/document/8569740>
8. Zarkadis, K., Velenis, E., Siampis, E., Longo, S. (2018). Predictive torque vectoring control with active trail-braking. *2018 European Control Conference*. <https://ieeexplore.ieee.org/document/8550061>



10. Stryszowski, M., Longo, S., Velenis, E., Shah, B.R.A.R.M. (2018). Energy and time-optimal connected autonomous vehicle interaction: cruising and overtaking. *2018 European Control Conference*. <https://ieeexplore.ieee.org/abstract/document/8550435>
11. Morganti, M. V., Longo, S., & Shah, R. M. (2017). Development of a HIL rig for vehicle thermal management systems design and optimisation. In *IMEchE Vehicle Thermal Management Systems 13*. London, UK: IMechE. Retrieved from <http://events.imeche.org/ViewEvent?code=CON6389>
12. Herath, N., Binduhewa, P., Samaranyake, L., Ekanayake, J., & Longo, S. (2017). Design of a Dual Energy Storage Power Converter for a Small Electric Vehicle. In *Conference on Industrial and Information Systems (ICIIS), 2017 IEEE International*. Peradeniya, Sri Lanka: IEEE. <https://doi.org/10.1109/ICIINFS.2017.8300393>
13. Fotouhi, A., Shateri, N., Auger, D. J., Purkayastha, R., Wild, M., Propp, K., & Longo, S. (2016). A MATLAB Graphical User Interface for Battery Design and Simulation. In *International Conference on Synthesis, Modeling, Analysis and Simulation Methods and Applications to Circuit Design (SMACD 2016)*. Lisbon, Portugal. Retrieved from <http://smacd2016.lx.it.pt/>
14. Fotouhi, A., Propp, K., Samaranyake, L., Auger, D. J., & Longo, S. (2016). Electric vehicle battery management algorithm development using a HIL simulator incorporating three-phase machines and power electronics. In *3rd Biennial International Conference on Powertrain Modelling and Control*. Loughborough, UK. Retrieved from <http://www.pmc2016.net/>
15. Fotouhi, A., Auger, D. J., Propp, K., & Longo, S. (2016). Electric Vehicle Battery Parameter Identification and SOC Observability Analysis: NiMH and Li-S Case Studies. In *8th IET International Conference on Power Electronics, Machines and Drives*. Glasgow, UK: IET. Retrieved from <http://conferences.theiet.org/pemd/>
16. Abir, J., Morantz, P., Longo, S., & Shore, P. (2016). Feedback based technique for improving dynamic performance of a small size machine tool. In *Precision Mechatronic System Design and Control - Spring Topical Meeting*. Cambridge, Massachusetts, USA: American Society for Precision Engineering (ASPE). Retrieved from <http://aspe.net/technical-meetings/past-aspe-meetings/spring-2016/technical-program/>
17. Abir, J., Morantz, P., Longo, S., & Shore, P. (2016). A novel feedback based accelerometer concept for improving machine dynamic performance. In *7th IFAC Symposium on Mechatronics Systems & 15th Mechatronics Forum International Conference*. Loughborough, UK: IFAC. Retrieved from <http://www.mechatronics2016.lboro.ac.uk/>
18. Abir, J., Morantz, P., Longo, S., & Shore, P. (2016). An accelerometer based-feedback technique for improving dynamic performance of a machine tool. In *16th international conf. of the European society of precision engineering*. Nottingham, UK: euspen. Retrieved from <http://www.euspen.eu/>
19. Basrah, M. S., Siampis, E., Velenis, E., Cao, D., & Longo, S. (2016). Integration of Torque Blending and Slip Control using Nonlinear Model Predictive Control. In *13th International Symposium on Advanced Vehicle Control (AVEC'16)*. Munich, Germany. Retrieved from <http://www.avec16.com/>
20. Fotouhi, A., Auger, D. J., Propp, K., & Longo, S. (2016). A Study on Battery Model Parametrisation Problem – Application-Oriented Trade-offs between Accuracy and Simplicity. In *8th IFAC Symposium Advances in Automotive Control (AAC 2016)*. Kolmarden Wildlife Resort, Sweden: IFAC. Retrieved from [http://aac2016.isy.liu.se/?page\\_id=15](http://aac2016.isy.liu.se/?page_id=15)
21. Amy, T., Kong, H., Auger, D., Offer, G., & Longo, S. (2016). Regularized MPC for Power Management of Hybrid Energy Storage Systems with Applications in Electric Vehicles. In *8th IFAC Symposium Advances in Automotive Control (AAC 2016)*. Kolmarden Wildlife Resort, Sweden: IFAC. Retrieved from [http://aac2016.isy.liu.se/?page\\_id=15](http://aac2016.isy.liu.se/?page_id=15)
22. Kampanakis, A., Siampis, E., Velenis, E., & Longo, S. (2016). A Torque Vectoring Optimal Control Strategy for Combined Vehicle Dynamics Performance Enhancement and Electric Motor Ageing Minimisation. In *8th IFAC Symposium Advances in Automotive Control (AAC 2016)*. Kolmarden Wildlife Resort, Sweden: IFAC. Retrieved from [http://aac2016.isy.liu.se/?page\\_id=15](http://aac2016.isy.liu.se/?page_id=15)
23. Fotouhi, A., Auger, D. J., Cleaver, T., Shateri, N., Propp, K., & Longo, S. (2016). Influence of Battery Capacity on Performance of an Electric Vehicle Fleet. In *5th International Conference on Renewable Energy Research and Applications (CRERA)*. Birmingham, UK. Retrieved from <http://www.icrera.org/>
24. Sowman, J., Laila, D., & Longo, S. (2015). Real-Time Approximate Explicit Nonlinear Model

- Predictive Control for the Swing-Up of a Reaction Wheel Pendulum. In *55th IEEE Conference on Decision and Control (CDC'15)* (pp. 4308–4313). Osaka, Japan: IEEE.  
<http://doi.org/10.1109/CDC.2015.7402891>
25. Tavernini, D., Velenis, E., & Longo, S. (2015). Model Based Active for Pitch Angle Minimization. In *55th IEEE Conference on Decision and Control (CDC'15)* (pp. 197–202). Osaka, Japan: IEEE.  
<http://doi.org/10.1109/CDC.2015.7402108>
  26. Saramanayake, L., & Longo, S. (2015). Cost Functions for Degradation Control of Electric Motors in Electric Vehicles. In *European Control Conference 2015 (ECC'15)* (pp. 660–665). Linz, Austria: EUCA. <http://doi.org/10.1109/ECC.2015.7330617>
  27. Kong, H., & Longo, S. (2015). Cooperative Distributed Model Predictive Control via Linear Programming—A Divide and Conquer Approach. In *5th IFAC Conference on Nonlinear Model Predictive Control (NMPC'15)* (pp. 308–313). Seville, Spain: Elsevier.  
<http://doi.org/doi:10.1016/j.ifacol.2015.11.300>
  28. Siampis, E., Velenis, E., & Longo, S. (2015). Model Predictive Torque Vectoring Control for Electric Vehicles Near the Limits of Handling. In *European Control Conference 2015 (ECC'15)* (pp. 2553–2558). Linz, Austria: EUCA. <http://doi.org/10.1109/ECC.2015.7330922>
  29. Siampis, E., Velenis, E., & Longo, S. (2015). Predictive Rear Wheel Torque Vectoring Control with Terminal Understeer Mitigation using Nonlinear Estimation. In *55th IEEE Conference on Decision and Control (CDC'15)* (pp. 4302–4307). Osaka, Japan: IEEE.  
<http://doi.org/10.1109/CDC.2015.7402890>
  30. Siampis, E., Velenis, E., & Longo, S. (2015). Front-to-Rear Torque Vectoring Model Predictive Control for Terminal Understeer Mitigation. In *24th International Symposium on Dynamics of Vehicles on Roads and Tracks (IAVSD'15)*. Graz, Austria. <http://doi.org/10.1201/b21185-18>
  31. Samaranayake, L., & Longo, S. (2015). Nonlinear Model Predictive Control for Traction Motor Degradation Minimization. In *55th IEEE Conference on Decision and Control (CDC'15)* (pp. 3681–3686). Osaka, Japan: IEEE. <http://doi.org/10.1109/CDC.2015.7402790>
  32. Balakrishnan, V. K., Longo, S., Velenis, E., & Barber, P. (2014). Sensor Configurations and Testbed for Vehicle State Estimation. In *UKACC International Conference on Control (CONTROL)* (pp. 407–412). Loughborough, UK: IEEE.  
<http://doi.org/10.1109/CONTROL.2014.6915175>
  33. Al-Jazaeri, A. O., Samaranayake, L., Longo, S., & Auger, D. J. (2014). Fuzzy Logic Control for Energy Saving in Autonomous Electric Vehicles. In *IEEE International Electric Vehicle Conference (IEVC 2014)* (pp. 1–6). Florence, Italy: IEEE. <http://doi.org/10.1109/IEVC.2014.7056100>
  34. Suardi, A., Longo, S., Kerrigan, E. C., & Constantinides, G. A. (2014). Robust explicit MPC design under finite precision arithmetic. In *19th World Congress of the International Federation of Automatic Control* (pp. 2939–2944). Cape Town, South Africa: IFAC.  
<http://doi.org/10.3182/20140824-6-ZA-1003.01033>
  35. Mohan, G., Assadian, F., & Longo, S. (2014). Comparative Analysis of Multiple Powertrain Architectures based on a Novel Optimization Framework. In *SAE 2014 World Congress & Exhibition*. Detroit, USA: SAE. <http://doi.org/10.4271/2014-01-1105>
  36. Feig, P., Billitteri, F., Longo, S., & Auger, D. J. (2014). Sensors-models trade-offs in battery state estimation. In *IET reference instead? (IET 5th Hybrid and Electric Vehicle Conference)* (pp. 1–7). London, UK: IET. <http://doi.org/10.1049/cp.2014.0939>
  37. Fotouhi, A., Auger, D. J., Propp, K., & Longo, S. (2014). Simulation for prediction of vehicle efficiency, performance, range and lifetime: a review of current techniques and their applicability to current and future testing standards. In *IET 5th Hybrid and Electric Vehicle Conference* (pp. 1–8). London, UK: IET. <http://doi.org/10.1049/cp.2014.0959>
  38. Liu, Y., Longo, S., & Kerrigan, E. C. (2013). Nonlinear Predictive Control of Autonomous Soaring UAVs Using 3DOF Models. In *European Control Conference (ECC'13), 2013*. Zurich, Switzerland. Retrieved from <http://www.nt.ntnu.no/users/skoge/prost/proceedings/ecc-2013/data/papers/0966.pdf>
  39. Papazoglou, A., Longo, S., Auger, D., & Assadian, F. (2013). Computational aspects of estimation algorithms for battery-management systems. In *8th Conference on Sustainable Development of Energy, Water and Environment Systems*. Dubrovnik, Croatia. Retrieved from <http://www.dubrovnik2013.sdewes.org/>
  40. Longo, S., Kerrigan, E. C., & Constantinides, G. A. (2013). A predictive control solver for low-precision data representation. In *European Control Conference (ECC'13), 2013*. Zurich,

- Switzerland. Retrieved from <http://cas.ee.ic.ac.uk/people/gac1/pubs/StefanoECC13.pdf>
41. Auger, D., Groff, M., Mohan, G., Longo, S., & Assadian, F. (2013). The impact of battery ageing on an EV powertrain optimization. In *8th Conference on Sustainable Development of Energy, Water and Environment Systems*. Dubrovnik, Croatia. Retrieved from <http://www.dubrovnik2013.sdewes.org/>
  42. Mohan, G., Assadian, F., & Longo, S. (2013). Comparative analysis of forward-facing models vs backward-facing models in powertrain component sizing. In *IET 4th Hybrid and Electric Vehicles Conference (HEVC13), 2013*. London, UK. Retrieved from <http://conferences.theiet.org/hevc/>
  43. Suardi, A., Longo, S., Kerrigan, E. C., & Constantinides, G. A. (2013). Energy-aware MPC co-design for DC-DC converters. In *European Control Conference (ECC'13), 2013*. Zurich, Switzerland. Retrieved from <http://www.ecc13.ch/>
  44. Su, T., Longo, S., Na, J., Herrmann, G., & Fan, N. (2012). Robustness-verification in networked control systems via sum-of-square approach. In *IEEE International Symposium on Industrial Electronics (ISIE), 2012* (pp. 1852 – 1857). Hangzhou, China: IEEE. <http://doi.org/10.1109/ISIE.2012.6237374>
  45. Kerrigan, E. C., Jerez, J. L., Longo, S., & Constantinides, G. A. (2012). Number Representation in Predictive Control. In *IFAC Conference on Nonlinear Model Predictive Control 2012, (NMPC'12)* (pp. 60–67). Noordwijkerhout, the Netherlands: IFAC. <http://doi.org/10.3182/20120823-5-NL-3013.00017>
  46. Lee, D., Longo, S., & Kerrigan, E. C. (2012). Predictive Control for Soaring of Unpowered Autonomous UAVs. In *IFAC Conference on Nonlinear Model Predictive Control 2012 (NMPC'12)* (pp. 194–199). Noordwijkerhout, the Netherlands: IFAC. <http://doi.org/10.3182/20120823-5-NL-3013.00021>
  47. Su, T., Longo, S., Na, J., Herrmann, G., & Fan, N. (2012). Concept for hybrid optimization for schedule design in nonlinear networked control. In *IEEE International Symposium on Industrial Electronics (ISIE), 2012* (pp. 1840 – 1845). Hangzhou, China: IEEE. <http://doi.org/10.1109/ISIE.2012.6237372>
  48. Longo, S., Su, T., Herrmann, G., Barber, P., & Gerlinger, U. (2011). Scheduling of the FlexRay static segment for robust controller integration. In *IEEE International Conference on Control Applications (CCA), 2011* (pp. 1487 – 1492). Denver, Colorado, USA: IEEE. <http://doi.org/10.1109/CCA.2011.6044499>
  49. Zheng, D., Na, J., Ren, X., Herrmann, G., & Longo, S. (2011). Adaptive Control of Robotic Servo System with Friction Compensation. In *IEEE Conference on Robotics, Automation and Mechatronics (RAM), 2011* (pp. 285 – 290). Qingdao, China: IEEE. <http://doi.org/10.1109/RAMECH.2011.6070497>
  50. Longo, S., Kerrigan, E. C., Ling, K. V., & Constantinides, G. A. (2011). Parallel Move Blocking Model Predictive Control. In *50th IEEE Conference on Decision and Control and European Control Conference (CDC-ECC), 2011* (pp. 1239 – 1244). Orlando, FL, USA: IEEE. <http://doi.org/10.1109/CDC.2011.6160429>
  51. Longo, S., Herrmann, G., & Barber, P. (2010). Robust controller scheduling in automotive communication networks. In *10th International Symposium on Advanced Vehicle Control (AVEC 10)*. Loughborough, UK. Retrieved from <http://www.lboro.ac.uk/departments/aae/avec10/>
  52. Longo, S., Herrmann, G., & Barber, P. (2009). Optimization Approaches for Controller and Schedule Codesign in Networked Control. In *6th IFAC Symposium on Robust Control Design, 2009* (Vol. 6, pp. 301–306). Dan Panorama Hotel, Haifa, Israel. <http://doi.org/10.3182/20090616-3-IL-2002.00052>
  53. Longo, S., Herrmann, G., & Barber, P. (2009). Optimal Scheduling Methods for Time-Triggered Networked Control. In *International Conference on Systems Engineering (ICSE2009), 2009*. Coventry, UK.
  54. Longo, S., Herrmann, G., & Barber, P. (2009). Controllability, Observability in Networked Control. In *6th IFAC Symposium on Robust Control Design, 2009* (Vol. 6, pp. 295–300). Dan Panorama Hotel, Haifa, Israel. <http://doi.org/10.3182/20090616-3-IL-2002.00051>