Dr. Javier Alonso-Mora, Associate professor, born 1985 (38 years old)

Contact Information

Department of Cognitive Robotics
Faculty of Mechanical, Maritime and Materials Engineering
Delft University of Technology
Mekelweg 2, Office F-2-100
2628 CD Delft, Netherlands

Phone: +31 (0)15 27 85489
Email: j.alonsomora@tudelft.nl
Web: www.autonomousrobots.nl

Summary

I have made pioneer contributions to the fields of Intelligent Transportation Systems, namely in shared mobility-on-demand (ride pooling) and motion planning among decision-making agents, and Robotics. I am the recipient of an ERC Starting Grant 2021, the 2019 ICRA Best Paper Award on Multi-Robot Systems and a 2017 Veni grant by the Netherlands Organization for Scientific Research (NWO). Together with my group and collaborators, I have published over 100 scientific articles with over 6,600 citations (h-index 38). I have also co-founded a successful transportation startup, The Routing Company.

Education

Ph.D. Robotics, "Collaborative Motion Planning for Multi-Agent Systems" **10/2010 - 03/2014**
ETH Zurich, Zurich, Switzerland, Prof. R. Siegwart
Thesis committee: Prof. R. Siegwart, Dr. P. Beardsley, Prof. R. D'Andrea, Prof. D. Rus

M.Sc. Robotics, Systems & Control **09/2008 - 05/2010**
ETH Zurich, Zurich, Switzerland GPA: 5.92 (max. 6), Rank: 1 (ETHZ Willi-Studer Prize)

M.Sc. Industrial Engineering - Ingeniería Industrial **09/2003 - 06/2010**
Universitat Politècnica de Catalunya, Barcelona, Spain GPA: 9.2 (max. 10), Rank: 1

B.Sc. Mathematics - Licenciatura en Matemáticas **09/2003 - 06/2008**
Universitat Politècnica de Catalunya, Barcelona, Spain GPA: 9.2 (max. 10), Rank: 2

Experience

Delft University of Technology, Delft, Netherlands
Associate Professor, Department of Cognitive Robotics **08/2020 - present**
Assistant Professor, Department of Cognitive Robotics **07/2017 - 07/2020**
Assistant Professor, Delft Center for Systems and Control **10/2016 - 06/2017**

- I lead the Autonomous Multi-Robots laboratory, which is formed by over 15 PhDs and Postdoctoral researchers working of various aspects of motion planning, learning and coordination. Our work is funded by an ERC Starting Grant, H2020 projects, NWO projects and industry.

The Routing Company, Boston, MA, USA
Co-founder and scientific advisor **01/2021 - present**
Co-founder, board member and scientific advisor Routable AI **10/2018 - 12/2020**

- TRC offers a turnkey fleet management solution for fleets of on-demand shared cars, shuttles and buses. The company builds upon my past research on ridesharing.

Amsterdam Institute for Advanced Metropolitan Solutions, Amsterdam, Netherlands
Principal Investigator **01/2019 - 31/2022**

- We tackled today's urban sustainability challenges with a focus on robotics and transportation.

Massachusetts Institute of Technology, Computer Science and Artificial Intelligence Lab CSAIL, Distributed Robotics Lab - Prof. D. Rus, Cambridge, USA
Postdoctoral Associate **08/2014 - 09/2016**

- Developed constrained optimization algorithms for multi-robot navigation, motion planning, multi-robot collaborative manipulation, reactive mission planning with formal methods and on-demand transportation including ride sharing.
- Led the planning & control part for the Toyota-CSAiL research effort on self-driving cars.
- Collaborated with the Singapore-MIT alliance for technology, Cornell University and across MIT.

Visiting Researcher **02/2013 - 06/2013**

- Developed a method for collaborative manipulation of deformable objects by a team of mobile manipulators, within the larger goal of factory automation and funded by The Boeing Company.

Disney Research Zurich, Computer Vision Lab - Dr. P. Beardsley, Zurich, Switzerland

Consultant **09/2015 - 09/2017**
Postdoctoral Researcher - joint with ETH Zurich **03/2014 - 07/2014**
Doctoral Researcher - joint with ETH Zurich **09/2010 - 02/2014**
Summer intern **06/2009 - 08/2009 & 06/2010 - 08/2010**

- Executed several successful technology transfers and collaborations with Imagineering R&D, The Walt Disney Company, USA.
- Created a novel interactive display formed by hundreds of mobile robots.
- Developed prototypes for semi-autonomous driving and mobile robots on land, water and air.

ETH Zurich, Autonomous Systems Lab - Prof. R. Siegwart, Zurich, Switzerland

Postdoctoral Researcher **03/2014 - 07/2014**
PhD Researcher **09/2010 - 02/2014**

- Developed and applied algorithms for multi-robot control, motion planning in dynamic environments and human-swarm interaction.

EPF Lausanne, Chair of International Finance, Lausanne, Switzerland

Research Intern **06/2008 - 07/2008**

- Studied optimization models for optimal fiscal policy in small countries, such as Switzerland.

Institut de Robòtica i Informàtica Industrial, Barcelona, Spain

Part-time Research Intern **09/2006 - 12/2007**

- Developed a numerical model (thermo and fluid dynamics) of a PEM fuel cell.

Honors and Awards

Personal

- ERC Starting Grant, European Research Council, 2021.
- IEEE ICRA Best Paper Award on Multi-Robot Systems, 2019.
- Amazon Research Awards, 2019.
- Winner Taxify Self-driving Fleet Optimisation Challenge, 2018.
- NWO Veni award, Talent Scheme, The Netherlands Organisation for Scientific Research, 2017. (Most prestigious grant and award in the Netherlands for young researchers, 12% success rate)
- Best video award (2nd price), IEEE Conference in Human Robot Interaction (HRI), 2014.
- Best student paper nomination, Int. Symp. on Distributed Autonomous Robotic Systems, 2010.
- Willi-Studer Prize for highest GPA in M.Sc. RSC, ETH Zurich, 2010.
- Winning team of the Nanogram cup at the Robocup, Graz, 2009.
- Swiss Government Excellence Scholarships for Foreign Scholars ESKAS, 2008-2010.
- Postgraduate fellowship Caja Madrid, 2008.
- Spanish National Research Council (CSIC), Introduction to Research Grant, 2007.
- DAAD scholarship for German studies, 2006.
- Bronze medal in the VIII Ibero-American Mathematics Olympiad for university students, 2005.
- Excellence Scholarship, Centre de Formació Interdisciplinària Superior (CFIS UPC), 2003-2008.
- Silver medal in the XXXIX Spanish Mathematics Olympiad for high-school students. 2003.
- Silver medal in the XIV Spanish Physics Olympiad for high-school students. 2003.
- Several prices in various Mathematics competitions for high-school students, 2000-2003.

By supervised researchers

- Aspasia grant, L. Ferranti, 2018.
- ETH Spark award finalist, T. Naegeli, 2017.
- Qualcomm scholarship, T. Naegeli, 2014.
- Siemens prize to best Bachelor Fokus Project at ETH, Skye team, 2012.

Projects

Personal (PI) Total scientific founding = **2.15M €**

- ERC Starting Grant, "Intuitive Interaction for Robots among Humans (INTERACT)" 2022-2027
1.5M €
- PPS Didi Udian Technologies, "Shared Mobility on Demand" 2019-2020
120k €
- Amazon Research Award, "Predictive Multi-objective Fleet Routing and Assignment" 2019
80k $
- PPS Continental AG, "Urban mobility study for Singapore" 2018
12k €
- The Netherlands Organisation for Scientific Research (NWO) Veni award, Talent Scheme, "Robots among humans: safe and socially intuitive navigation" 2017-2020
310k €
- Amsterdam Institute for Advanced Metropolitan Solutions (AMS), "Urban robotics" 2017-2018
100k €
- NWO Take Off Phase 1, "Automated drone inspections for aircraft" 2017
40k €

Co-applicant (co-PI) Total scientific founding for my group = **4.7M €**
- NWO NWA NeurolabNL, "Perceptive acting under uncertainty: safety solutions for autonomous systems" 2021-2027
700k €, total consortium 3.6M €, partners: TUD, CWI, UvA, RUN, TUE, TNO, NLR, 2getthere, IMEC
- EU H2020 ICT-46-2020 RIA, "HARMONY: Enhancing Healthcare with Assistive Robotic Mobile Manipulation" 2021-2024
780k €, total consortium 5M €, partners: TUD, ETHZ, U. Bonn, CREATE, U. Edinburgh, U. Twente, Region Stockholm, ABB, U. Zurich, IDMIND
- PPS National Police AI Lab, "Smart mobile robots for intuitive, reliable and safe operation in hazardous environments" 2020-2024
1M €, total consortium 2M €, partners: CoR (TUD), TPM (TUD).
- NWO Top Sector Water & Maritime: the Blue route, "Sustainable Transportation and Logistics over Water: Electrification, Automation and Optimization (TRiLOGy)" 2020-2024
439k €, total consortium 878k €, partners: M&TT (TUD), AMS, DEMCON Unmanned Systems B.V., Municipality of Amsterdam, Zoev City B. V., Flying fish.
- EU H2020 MG-2-7-2019 RIA, "SAFE-UP: 'proactive SAFEty systems and tools for a constantly UPgrading road environment'" 2020-2023
258k €, total consortium 8,000k €, partners: CiGT (TUD), TUE, TNO, IDIADA, Aimsun SLU, Audi AG, Robert Bosch GmbH, Continental, CEA, CERTH, CHALMERS, RWTH Aachen, TH Ingolstadt, Toyota, U. Firenze, VIF, ZF
- PPS Ahold Delhaize "AI for Retail Lab Delft (AIRLab Delft)" 2019-2024
1M €, total consortium 2,5M €, partners: CoR (TUD), TPM (TUD), Robovalley.
- NICOP Office for Naval Research Global, "Distributed high-level scene reasoning with teams of heterogeneous robots" 2019-2022
270k $, total consortium 450k $, partners: U. Zaragoza
- 3mE Cohesion grant, "Crowd behavior modeling (CBM) of ultra large passenger ships" 2020
60k €, partners: M&TT (TUD).
- 3mE Cohesion grant, "Platform-Based Cooperation Models for Automated Transportation and Logistics" 2019
60k €, partners: M&TT (TUD), DCSC (TUD).
- DDFV's Open Subsidy Call, "CIVICS: Designing and experimenting democratic human-robot partnerships in the smart city" 2018
6.5k €, partners: IDE (TUD), BK (TUD).
- 3mE Cohesion grant, "Shaping collective behaviors through complex interactions" 2018
50k €, partners: DCSC (TUD), P&E (TUD).
- 3mE Cohesion grant, "Formation control for waterborne structures" 2017

50k €, partners: M&TT (TUD), DCSC (TUD).
- TUD Space Institute, "Distributed formation control for remote sensing" 2016
30k €, partners: DCSC (TUD), AE (TUD).

Participant
- NWO SafeVRU (D. Gavrila) - main lead of the motion planning work package, 2018-2022
- Toyota-MIT parallel autonomy (S. Karaman and D. Rus) - informal co-applicant, 2016.
- Singapore-MIT Alliance for Research and Technology - Future Mobility program, 2014-2016.
- Office Naval Research ONR grants pDOT and SMARTS on distributed teams of robots, 2014-2016.
- Boeing-MIT research effort on smart factories, 2014-2016.
- Disney Research Zurich, covered 50% of my PhD costs, 2010-1014.

Teaching Experience

Qualifications

University Teaching Qualification (Basiskwalificatie Onderwijs), TU Delft 02/2019

Courses
- RO4705 Planning and Decision Making, TU Delft, Delft, Netherlands
Responsible lecturer, I designed and teach the course, 5 EC, 140 students. 2020-present
- SC42090/ME47035 Robot Motion Planning and Control, TU Delft, Delft, Netherlands
Responsible lecturer, I designed and taught the course, 4 EC, 150 students. 2018-2021
- MIT 2.166 Autonomous Vehicles (Duckietown), MIT, Cambridge, USA
Part of the lecturer and design team, `https://duckietown.mit.edu/`, 30 students. 2016

Guest lecturer and other contributions to courses
- ME41025 Robotics Practicals, TU Delft, Delft, Netherlands
Two lectures and two practicals given by my PhD student B. Brito. 2018-2020
- SC42035 Integration Project Systems & Control, TU Delft, Delft, Netherlands
Part of the exam committee. 2017
- IN4010(-12) Artificial Intelligence Techniques, TU Delft, Delft, Netherlands
One lecture "Motion planning" and exam questions, 100 students. 28/11/2017
- ME41105 Intelligent Vehicles, TU Delft, Delft, Netherlands
One lecture "Motion planning for Autonomous Vehicles", 50 students. 22/10/2016 & 04/12/2017
- Robotic manipulation, Cornell University, Ithaca, USA
One lecture "Collision avoidance for cooperative robots", 10 students. 05/11/2014
- Introduction to mobile robots, ETH Zurich, Zurich, Switzerland.
Supervision of exercise lectures, about thirty students. 02/2011 - 05/2011

Student projects
- Supervisor of 30+ B.Sc., 45+ M.Sc. and 15+ PhD students.

Supervision

Postdoctoral researchers
- Dr. Daniel Jarne Ornia 02/2023 - present
- Dr. Gang Chen 02/2023 - present
- Dr. Nils Wilde 09/2021 - present
- Dr. Andres Fielbaum 11/2019 - 02/2023
—> *now Assistant Professor at University of Sydney, Australia.*
- Dr. Xinwei Wang (Joint with M. Wang) 10/2020 - 01/2023
—> *now Assistant Professor at Queen Mary University of London, UK.*
- Dr. Breno Alves Beirigo (Joint with B. Atasoy) 12/2020 - 08/2022
—> *now Assistant Professor at Twente University, The Netherlands.*
- Dr. Jashnu Narayan (Joint with A. Kana and B. Atasoy) 12/2020 - 01/2022
—> *now Research Fellow at University College London, UK.*
- Dr. Xiaoshan Bai 08/2019 - 07/2020
—> *now Assistant Professor at Shenzhen University, China.*
- Dr. Jieting Luo (Joint with E. Steur and J. Padding) 11/2018 - 10/2019

—> *now Researcher at University of Bern, Switzerland.*
- Dr. Laura Ferranti (Joint with R. Happee and D. Gavrila) 05/2018 - 10/2019
———— (Joint with R. Negenborn and T. Kevizcky) 04/2017 - 04/2018
—> *now Assistant Professor at TU Delft, Netherlands.*
- Dr. Michal Cap, AMS fellow 10/2017 - 12/2018
—> *now Director of Autonomy at iSee, USA.*

PhD candidates
- Andreu Matoses, main supervisor / promotor (TUD) 06/2023 - present
- Saray Bakker, main supervisor / promotor (TUD) 11/2022 - present
- Khaled Mustafa, main supervisor / promotor (TUD) 07/2022 - present
- Anna Meszaros, co-promotor (TUD), PI: J. Kober 01/2022 - present
- Lasse Peters, main supervisor / promotor (TUD) 10/2021 - present
- Luzia Knoedler, main supervisor / promotor (TUD) 02/2021 - present
- Dennis Benders, promotor (TUD), PI: L. Ferranti 01/2021 - present
- Max Lodel, main supervisor / promotor (TUD) 10/2020 - present
- Elia Trevisan, main supervisor / promotor (TUD) 10/2020 - present
- Oscar de Groot, main supervisor / promotor (TUD) 03/2020 - present
- Max Spahn, main supervisor / promotor (TUD) 01/2020 - present
- Maximilian Kroenmuller, main supervisor / promotor (TUD) 09/2019 - present
- Álvaro Serra Gomez, main supervisor / promotor (TUD) 07/2019 - present
- Daniel Jarne Ornia, co-promotor, PI: M. Mazo (TUD) 09/2018 - 02/2023
—> *Thesis: Efficient Control for Cooperation: Communication, Learning and Robustness in Multi-Agent Systems*
—> *now Postdoctoral researcher in my group.*
- Bruno Brito, main supervisor / promotor (TUD) 01/2018 - 10/2022
—> *Thesis: Interaction-Aware Motion Planning in Crowded Dynamic Environments*
—> *now Senior Research Engineer - Team Lead at Motional, USA.*
- Hai Zhu, main supervisor / co-promotor (TUD) 10/2017 - 02/2022
—> *Thesis: Probabilistic Motion Planning for Multi-Robot Systems*
—> *now Researcher at China Aerospace Science and Industry Corporation, China.*
- Wilko Schwarting, supervisor while at MIT, PI: D. Rus (MIT) 09/2016 - 12/2020
—> *Thesis: Learning and Control for Interactions in Mixed Human-Robot Environments*
—> *now Head of AI at iSee, USA.*
- Alex Wallar, supervisor while at MIT, PI: D. Rus (MIT) 09/2015 - 05/2019
—> *now CTO at The Routing Company, USA.*
- Tobias Naegeli, co-advisor, PI: O. Hilliges (ETHZ) 09/2014 - 09/2018
—> *Thesis: Intelligent Drone Cinematography*
—> *now CEO at Tinamu Labs, Switzerland.*

Visitors PhD and PD
- Patrik Vacek (2023), PhD candidate at CTU Prague.
- Sara Casao Martinez (2022), PhD candidate at University of Zaragoza.
- Gang Chen (2021-2022), PhD candidate at Shanghai Jiao Tong University.
- Aaron Ray (2020), PhD candidate at MIT.
- Daniel Fiedler (2018), PhD candidate at CTU Prague.
- Maite Lorente (2018), PhD candidate at U. Zaragoza.
- Hans Andersen (2017), PhD candidate at NUS.

M.Sc. students
TUD: J. Snijders (-), M. Shi (-), S. Wang (-), S. Wu (-), F. Zhang (-), X. Liu (-), C. van Venrooij (-), J. Vellekoop (-), D. Kalyanasundaram (-), M. Schmidt (2022), N. Theodoridis (2022), L. Brouwer (2022), W. Jansma (2022), M. Matthieu (2022), A. Kemmeren (2022 - cum laude), L. Streichenberg (2022), K. Luís Voogd (2022), A. Schwarz (2022), D Manivannan (2022), S. Cong (2022), C. Claij (2022), J. van Dam (2022 - cum laude), S. Bhatia (2022), Q. LUO (2021), S. Brinkman (2021), E. Heerkens (2021), J. de Vries (2021 -

cum laude), P. van Houtum (2021), N. Marcelis (2021), B. Surewaard (2021), C. Salmi (2021), A. Agarwal (2021), P. Schuller (2021), F. Claramunt (2021), W. van Unen (Xomnia, 2020), J. Govers (2020), B. van den Berg (2020), E. Croll (2020), S. Gupta (2020), J. Lin (2019), A. de Ruijter (CiTG, 2019 - cum laude), B. van Hofslot (IHMC, 2019), M. vam Weperen (2019), R. de Jonge (Mainblades, 2019), Y. Katsaounis (2019), J. van Lochem (ORTEC, 2019), A. Krishnakumar (RCS, 2019), B. Floor (2018), R. Durrant (2018), W. Vaandrager (Transdev, 2018), D. Adrichem (Waternet, 2018), D. Bellan (2018), M. van der Zee (SMART, 2018 - cum laude), R. Willems (Aachen, 2018), N. Potdar (2018 - cum laude), F. Marquez (2018), A. Pallini (Mainblades, 2018), R. Cumbal (2017), J. Juhl (2017), B. Zhou (2017), A. Seewer (2017). MIT: S. Baker (2015). ETHZ: P. Andermatt (2019), M. Katancevic (2014), D. Jud (2014), T. Gubler (2013), M. Zellweger (2013), R. Grieder (2012), P. Gohl (2012), M. Schoch (2012), S. Hauri (2011), S. Haag (2011).

Research interns and engineers

TUD: T. Niesten (2022), B. Floor (2019), R. Ruigrok (2018-2019). DRZ: M. Katancevic (2013), T. Naegeli (2012), R. Grieder (2012), M. Eriksson (2012), P. Gohl (2013), S. Hauri (2011), K. Tran (2011).

B.Sc. students

TUD: 5 x Bachelor End Project (TUD), 2017-present. 3 x TFC from CFIS-UPC. MIT: 1 x B.Sc. thesis (2016). ETHZ: 8 x B.Sc. thesis, 2011-2014. Fokusproject: Co-supervisor of a one year long project where 14 students developed a spherical blimp, ETHZ, 2011-2012. The project won a price to the best Fokus project, led to a publication, a patent and a startup: www.skye.ethz.ch.

Teams for competitions

- MIT-TU Delft Formula Student Driverless Team. Motion planning advisor (2018-2000)

Service to the university

Leadership

- Representative of the Learning & Autonomous Control Section in the Management Team meeting of the Department Cognitive Robotics, TUD, From 01/2023.
- Chair of the education committee (opleidingscommissie) of M.Sc. Robotics, TUD, 09/2021-present.
- Mentoring of one TT assistant professor, 09/2020-present.
- Initiator of TUD's successful bid to host the robotics flagship conference Robotics: Science & Systems (RSS) in Delft in 2024. Co-organized with J. Kober and C. Della Santina.

Organization

- Co-organizer of the university-wide AI Meetups, 09/2022-present.
- First organizer of the LAC colloquia, 08/2021-06/2022.
- Contribution to the design of TUD's Cyberzoo 2 outdoor testing arena.
- Contribution to the committee designing the High Performace Computation of TUD.
- Contribution to the design and setup of the DCSC and CoR labs.
- Contribution to many public demonstrations in faculty and university events.
- Member of the TUD Robotics Institute.
- Member of the TUD Transportation Institute.
- Member of the TUD Space Institute.

Educational committees

- Member of the education committee (opleidingscommissie) of M.Sc. Mechanical Engineering, TUD, 10/2019-09/2021.
- Contribution to the design of the TUD M.Sc. Robotics.
- Member of 8 Assistant Professor (Tenure Track) selection committees.
- Member of 7 PhD exam committees (4 x TUD, 1 x ETHZ, 1 x EPFL, 1 x KTH).
- Member of the council of the PhD School in Industrial Innovation Engineering at University of Modena and Reggio Emilia, Italy, 2018-present.
- Reviewer PhD thesis, Università degli Studi del Sannio.
- Member of approx. 20 PhD Go/No go meetings, from various faculties.
- Member of approx. 100 M.Sc. thesis exams, from various faculties and departments.

Service to the community

Leadership

- Co-chair IEEE Robotics and Automation Society Technical Committee on Multi-Robot Systems, 01/2022-

present.

Policy making

- Member of the IEEE European Public Policy Committee (EPPC) Working Group on ICT. Advisory to the institutions of the European Union, 01/2021-12/2022.
I co-authored an IEEE whitepaper on Connected, Automated and Autonomous Vehicles.

Editorial

- Co-editor (together with Prof. A. Alahi), of a special issue in the journal "Data Science for Transportation", Springer, currently under development.
- Associate Editor, IEEE Transactions on Robotics, 2023-present.
- Associate Editor, Autonomous Robots Journal, Springer, 2020-present.
- Associate Editor, IEEE Robotics and Automation Letters (RA-L), IEEE, 2018-2021.
- Associate Editor, IEEE Int. Conf. on Robotics and Automation (ICRA), 2017-present.
- Associate Editor, IEEE/JRS Int. Conf. on Intelligent Robots and Systems (IROS), 2020-2022.
- Associate Editor, IEEE Int. Conf. on Unmanned Aircraft Systems (ICUAS), 2020.

Organizing committee

- Local Organizer, Robotics: Science and Systems (RSS), Delft, Netherlands, 2024.
- Co-organizer, Workshop on Human Multi-Robot Interaction, at IEEE/JRS Int. Conf. on Intelligent Robots and Systems (IROS), Detroit, USA, 2023.
- Co-organizer, Benelux Meeting on Systems and Control, Elspeet, Netherlands, 2023.
- Co-organizer, Workshop on Multi-Robot Learning, at IEEE Int. Conf. in Robotics and Automation (ICRA), London, UK, 2023.
- Publication Chair, IEEE Int. Symp. on Multi-robot and Multi-agent Systems (IEEE MRS), Cambridge, UK, 2021.
- Co-organizer, DISC Summer School 2020 "Planning, Learning and Control for Multi-Robot and Multi-Agent Systems", Zaandam, Netherlands, 2020.
- Co-organizer, 2nd Workshop on Multi-Robot Perception-Driven Control and Planning at IEEE/JRS Int. Conf. on Intelligent Robots and Systems (IROS), Madrid, Spain 2018.
- Co-organizer, Workshop on Multi-Robot Perception-Driven Control and Planning at IEEE Int. Conf. in Robotics and Automation (ICRA), Singapore, 2017.

Technical/Program committee member

- Co-chair IEEE ICRA Best paper award on Aerial Vehicles, 2020.
- PC member, Robotics: Science and Systems (RSS), 2016-present.
- PC member, Conf. on Autonomous and Multi-Agent Systems (AAMAS), 2018-2019.
- PC member, IEEE Int. Symp. on Multi-robot and Multi-agent Systems (IEEE MRS), 2019.
- PC member, Robotics Track at Conf. on Autonomous and Multi-Agent Systems (AAMAS), 2017-2018.
- PC member, Intelligent Robotics and Multi-Agent Systems track, ACM Symp. on Applied Computing 2016-2018.
- PC member, Pioneers Workshop at Robotics: Science and Systems (RSS), 2018.
- PC member, Blockchain for Robotics Symposium, 2018.
- PC member, Conf. on Artificial Intelligence (AAAI), 2018.
- PC member, International Joint Conference on Artificial Intelligence (IJCAI), 2018

Reviewing activities: grant applications

ERC Starting Grants, Flanders Innovation & Entrepreneurship, French National Research Agency (ANR), Israel Science Foundation - Personal research grants, Luxembourg National Research Fund (FNR) - CORE, Singapore Land Transport Authority - Urban Mobility Grand Challenge, Swiss National Science Foundation.

Reviewing activities: journals and conferences

Science Robotics, International Journal of Robotics Research, IEEE Transactions on Robotics, IEEE Robotics Magazine, IEEE Transactions on Human-Machine Systems, IEEE Transactions on Intelligent Transportation Systems, IEEE Transactions on Intelligent Vehicles, IEEE Robotics and Automation Letters, Springer Autonomous Robots, Robotics & Autonomous Systems Journal, ACM Surveys, Transportation Research Part C, Transportation Research Part B, IEEE Transactions in Mechatronics, Transactions on Cyber-Physical

Systems, Mechatronics Journal, RSS, ICRA, IROS, DARS, IJCAI, AAAI, ITSC, IV.

I have also served as external reviewer of promotion committees to Associate Professor.

Invited Talks

Plenary and Keynote talks at international conferences

- "Motion Planning among Decision-Making Agents", Keynote at IEEE RSJ Int. Conf. on Intelligent Robots and Systems (IROS), Oct. 2021
- "Trajectory optimization among decision-making agents: self-driving cars, drones and multi-robot systems", at IEEE Int. Conf. on Unmanned Systems (ICUS), Nov. 2020

Plenary talks at international workshops and summer schools

- "Motion Planning among Decision-Making Agents", at IEEE Summer School on Multi-Robot Systems, July 2023
- "Motion Planning among Decision-Making Agents", at Workshop and Industry Panel on Cooperative and Automated Driving, IEEE Int. Symposium on Intelligent Vehicles (IV), June 2023
- "Motion Planning among Decision-Making Agents", at Workshop on Development of Socially-Compliant Driving for AVs to Enhance Safety and Efficiency in Mixed Traffic, IEEE Int. Symposium on Intelligent Vehicles (IV), June 2023
- "Tutorial on motion planning", at Lorentz Center workshop on Rigorous Automated Planning, June 2022
- "Safe Motion Planning among Decision-Making Agents", at Workshop Toward explainable, robust and fair AI in automated and autonomous vehicles: challenges and opportunities for safety and security, European Commision Joint Interdisciplinary Center, Mar. 2022
- "Social motion planning for autonomous vehicles", at Workshop on RL for Intelligent Transportation Systems, Int. Joint Conf. on Artificial Intelligence (IJCAI), Aug. 2021
- "Multi-robot motion planning and coordination for object transport in dynamic environments", at Workshop on Robotic Manipulation of Deformable Objects, IEEE/JRS Int. Conf. on Intelligent Robots and Systems (IROS), Oct. 2020
- "Trajectory optimization for urban driving among decision-making vehicles", at Workshop on Decision-making for Self-driving Cars in Dynamic and Complex Environments, IEEE Int. Conf. on Intelligent Transportation Systems (ITSC), Oct. 2019
- "Predictive routing and multi-objective fleet sizing for shared mobility-on-demand", at Workshop on Autonomous and Connected Transportation Systems: Modeling, Control, and Deployment, IEEE Int. Conf. on Intelligent Transportation Systems (ITSC), Oct. 2019
- "Trajectory Planning for Multiple Robots in Dynamic Environments", at Robotics: Science and Systems (RSS), Workshop on Challenges and Opportunities for Resilient Collective Intelligence in Subterranean Environments, Pittsburgh, June 2018.
- "Aerial cinematography: towards the cameraman of the future", at IEEE Int. Conf. Robotics and Automation (ICRA), Workshop: Human Robot Interaction with UAVs: Challenges and Frontiers, Brisbane, Australia, May 2018.
- "Optimization and optimal control for multi-robot systems", at Robotics Science and Systems (RSS), Tutorial on Multi-robot Systems, Rome, Italy, Jul. 2015.

Plenary talks at other events

- "Predictive routing and multi-objective fleet sizing for shared mobility-on-demand", at 3eCAV Workshop, IFP Energies nouvelles, Paris, Sep. 2019
- "Robots among humans: safe and socially intuitive navigation", at Xperience Day, TU Delft Alumni, Delft, June 2019
- "Robots among humans: safe and socially intuitive navigation", at Talent Scheme Laureates meeting 2018, Netherlands Organisation for Scientific Research (NWO), Utrecht, Nov. 2018
- "High-capacity Ride-sharing in Autonomous Transportation Systems", at Future Urban Mobility Summer Research Workshops, SMART, Singapore, July 2018
- "Future of the Camera man", at the In.Air Drone Film Festival, Amsterdam, Netherlands, May 2018.
- "Aerial cinematography: towards the cameraman of the future", at Best Delft Swarm Robotics, May 2018.
- "Control y navegación de robots autónomos: drones, taxis y manipuladores móviles", plenary speaker at the Graduation Ceremony Centre de Formacio Interdisciplinaria Superior (CFIS), UPC, Barcelona, Spain, Dec. 2017.

- "Dynamic routing and assignment for high-capacity ride sharing in intelligent transportation systems", at the DBSS Symposium - Simulation & Data: An Unbreakable Bond, Dutch Benelux Simulation Society, Delft, Netherlands, Sep. 2017.
- "High-capacity ride-sharing and planning in intelligent autonomous transportation systems", at the Machine Intelligence in Autonomous Vehicles Summit Amsterdam, Re.Work, Amsterdam, Netherlands, June 2017.
- "Distributed formation control for teams of mobile robots", at the Office of Naval Research ONR Science of Autonomy Meeting, Washington DC, Aug. USA, 2016.
- "Constrained optimization methods for collaborative multi-robot motion planning and control", at the EITA-Smart Cities Forum, Boston, USA, Aug. USA, 2016.

Seminars

Topic: "Autonomous Planning and Control for Multi-Robot Systems and Intelligent Transportation"
- University of Zaragoza, Spain, 2023.
- Vrije Universiteit Brussel, Belgium, 2023.
- Leiden University, Netherlands, 2021.
- Ortec, Zoetemeer, Netherlands, 2019.
- Czech Technical University, Prague, Czech Republic, 2019.
- Didi Udian Tech, Shenzhen, China, 2019.
- Universidad Politecnica de Madrid, Madrid, Spain, 2018.
- University of Zurich, Zurich, Switzerland, 2018.
- IBM Research, Zurich, Switzerland, 2018.
- Taxify, Tallinn, Estonia, 2018.
- 2GetThere, Utrecht, Netherlands, 2018.
- Amsterdam Institute for Advanced Metropolitan Solutions (AMS), Amsterdam, Netherlands, 2018.
- Universidad de Zaragoza, Zaragoza, Spain, 2017.
- Instituto de Robotica e Informatica Industrial (IRI-CSIC), Barcelona, Spain, 2017.
- University of Groeningen, Groeningen, Netherlands 2017.
- Algorithmics group, TU Delft, Delft, Netherlands 2017.
- Continental AG, Frankfurt, Germany, 2017.
- Toyota-CSAIL annual research review, Cambridge, USA, 2016.
- Massachusetts Institute of Technology MIT, Cambridge, USA, 2016.
- GRASP lab, University of Pennsylvania, Philadelphia, USA, 2016.
- University of Twente, Enschede, The Netherlands, 2015.
- TU Delft, Delft, The Netherlands, 2015.
- SMART - National University of Singapore, Singapore, 2015.
- Harvard University, Cambridge, USA, 2015.
- Cornell University, Ithaca, NY, 2014.
- Massachusetts Institute of Technology, Cambridge, USA, 2013.
- Kantonsschule Computer Science Week at ETHZ, Zurich, Switzerland, 2012.
- Tokyo Disneyland, Tokyo, Japan, 2012.
- Pixar Animation Studios, Emmeriville, USA, 2011.
- Walt Disney Imagineering, Glendale, USA, 2011.
- Automatic Control Laboratory ETHZ, Zurich, Switzerland, 2010.

ENTREPRENEURSHIP
- The Routing Company: Urban mobility, Co-founder & advisor, Boston, USA, 2018-present.
- Tinamu labs: Aerial videography, Scientific advisor, Zurich, Switzerland, 2018-2020.
- Mainblades: Aerial inspection, PI NWO-TakeOff grant, Den Haag, Netherlands, 2017.
- Aerotain: Interactive shows with drones, Initiator of the precursor student project, Zurich, Switzerland, 2013.

PROFESSIONAL MEMBERSHIPS
- IEEE Senior Member (2020-present), Member (2015-2020), Student Member (2010-2014)
- IEEE Robotics and Automation Society (2010-present)
- IEEE Intelligent Transportation Systems Society (2019-present)

- IEEE RAS TC Multi-Robot Systems (2016-present)
- IEEE RAS TC Motion Planning (2016-present)
- Amsterdam Institute for Advanced Metropolitan Solutions (2016-present)
- TU Delft Robotics Institute (2016-present)
- TU Delft Transportation Institute (2016-present)
- TU Delft Space Institute (2016-present)
- Researchlab Automated Driving Delft (2017-present)
- Researchlab Autonomous Shipping Delft (2019-present)
- ShARE Economy, EPF Lausanne (Member, 2008)
- Barcelona's Student Chapter, Society for Industrial and Applied Mathematics (Member, 2006-08)
- ETSEIB student association for Space Exploration (Member, pre-finalist ESA parabolic flight, 2005-08)

Outreach

Public demonstrations

- Many lab visits for researchers, collaborators and sponsors at TUD, MIT, ETH and Disney Research Zurich.
- Public demonstrations at TUD for the 3mE family day, and ICAPS conference (2018) among others.
- MIT Open doors, USA, 2016. We showed our Toyota-CSAIL self-driving car to the public during one Saturday.
- Scientifica, Switzerland, 2012, 2013 and 2015. We demoed our multi-robot display during a weekend, receiving numerous visits by interested kids and adults.
- Disney Imagineering Open House, USA.

Media appearances

- Dutch NOS TV evening news (2019). Demonstration of our self-driving vehicle. [view]
- Spanish Antena 3 TV prime-time show "El Hormiguero" (2015). Live demonstration and interview in prime time Spanish television. Over 3 million viewers. [view]
- BBC TV Royal Institution Christmas Lectures (2014). Recorded demonstration. Over 1 million viewers.
- Interview in Bloomberg radio (2017).
- Articles and interviews in many printed and on-line media outlets, including: NRC, New Scientist (NL), The New York Times, Bloomberg, Financial Times, The Atlantic, CNN, Washington Post, Fox news, Time, Fortune, The Boston Globe, El Pais, Expansion, El Confidencial, Neue Zuercher Zeitung, IEEE Spectrum, Wired, New Scientist, Gizmodo, MIT news, CNET, The Telegraph, The Verge, Newsweek, etc.

Soft Skills

- Personal Development Program, TU Delft, Netherlands, 2017
- Postdoc Leadership Workshop, MIT, USA, 2016
- Venture Challenge - Start-up business plan, market analysis and pitch, Switzerland, 2013
- International Business Management for Engineers, ETH Zurich, Switzerland, 2012
- Horizon 3.0 Business Technology Office Workshop, McKinsey & Co., Dubai, UAE, 2008.

Computer Skills

C/C++ Programming language, Python, ROS Robotic Operating System, Optimization (CPLEX, MOSEK, SNOPT, GUROBI, Acado), Matlab, Simulink, Maple, AutoCad, Solidworks CAD, Ansys, LaTeX, Git/svn, Qt, cloud computing.

Languages

English (Professional level - C2), Spanish (Mother tongue), German (Conversational level - B1), French (Conversational level - B1), Catalan (Conversational level - B2), Dutch (Basic level - A2/B1).

Publication Measures

Indicators as of 22/05/2023:
- Google Scholar:
156 documents, 6666 citations, h-index 38, i10-index 74.
- Scopus:
98 documents, 3651 citations, h-index 30.

Paper [J7] is recognized as a Highly Cited Paper, having received enough citations to place it in the top 1% of the academic field of Engineering based on a highly cited threshold for the field and publication year. Data from Clarivate Essential Science Indicators

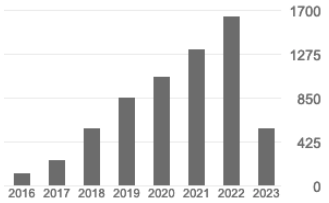

Figure 1: Citation count Google Scholar.

Publications

Peer-reviewed journals

(J47) A. Serra-Gomez, E. Montijano, W. Boehmer and J. Alonso-Mora, "Active Classification of Moving Targets with Learned Control Policies", in IEEE Robotics and Automation Letters (RA-L), Apr. 2023.

(J46) A. Fielbaum, A. Tirachini and J. Alonso-Mora, "Economies and diseconomies of scale in on-demand ridepooling systems", in Transportation Planning and Technology, Apr., 2023.

(J45) A. de Ruijter, O. Cats, J. Alonso-Mora and S. Hoogendoorn, "Ride-pooling adoption, efficiency and level of service under alternative demand, behavioural and pricing settings", in Transportation Planning and Technology, Apr., 2023.

(J44) L. Peters, V. Rubies-Royo, C. J. Tomlin, L. Ferranti, J. Alonso-Mora, C. Stachniss, and D. Fridovich-Kei, "Learning Players' Objectives in Continuous Dynamic Games from Partial State Observations", in International Journal on Robotics Research (IJRR), Apr., 2023.

(J43) X. Liu, L. Peters and J. Alonso-Mora, "Learning to Play Trajectory Games Against Opponents with Unknown Objectives", in IEEE Robotics and Automation Letters (RA-L), Apr., 2023.

(J42) M. Spahn, M. Wisse and J. Alonso-Mora, "Dynamic Optimization Fabrics for Motion Generation", in IEEE Transactions on Robotics (T-RO), Mar. 2023.

(J41) G. Chen, S. Wu, M. Shi, W. Dong, H. Zhu and J. Alonso-Mora, "RAST: Risk-Aware Spatio-Temporal Safety Corridors for MAV Navigation in Dynamic Uncertain Environments", in IEEE Robotics and Automation Letters (RA-L), Feb. 2023.

(J40) R. Perez-Dattari, B. Brito, O. de Groot, J. Kober, and J. Alonso-Mora, "Visually-Guided Motion Planning for Autonomous Driving from Interactive Demonstrations", in IFAC Engineering Applications of Artificial Intelligence Journal, Nov. 2022.

(J39) L. Ferranti, L. Lyons, R. R. Negenborn, T. Keviczky, and J. Alonso-Mora, "Distributed Nonlinear Trajectory Optimization for Multi-Robot Motion Planning", in IEEE Transactions on Control Systems Technology (T-CST), Oct. 2022.

(J38) X. Bai, A. Fielbaum, M. Kronmuller, L. Knoedler, and J. Alonso-Mora, "Group-based Distributed Auction Algorithms for Multi-Robot Task Assignment", in IEEE Transactions on Automation Science and Engineering (T-ASE), May 2022.

(J37) B. Brito, A. Agarwal, and J. Alonso-Mora, "Learning Interaction-Aware Guidance for Trajectory Optimization in Dense Traffic Scenarios", in IEEE Transactions on Intelligent Transportation Systems (T-ITS), Apr. 2022.

(J36) X. Wang, J. Alonso-Mora, M. Wang, "Probabilistic risk metric for highway driving leveraging multi-modal trajectory prediction", in IEEE Transactions on Intelligent Transportation Systems (T-ITS), Apr. 2022.

(J35) B. A. Beirigo, R. R. Negenborn, J. Alonso-Mora, F. Schulte, "A business class for autonomous mobility-on-demand: Modeling service quality contracts in dynamic ridesharing systems", in Transportation Research Part C: Emerging Technologies, Mar. 2022.

(J34) L. Knoedler, C. Salmi, H. Zhu, B. Brito and J. Alonso-Mora, "Improving Pedestrian Prediction Models with Self-Supervised Continual Learning", in IEEE Robotics and Automation Letters (RA-L), Feb. 2022.

(J33) H. Zhu, B. Brito and J. Alonso-Mora, "Decentralized Probabilistic Multi-Robot Collision Avoidance Using Buffered Uncertainty-Aware Voronoi Cells", in Autonomous Robots (AURO), Jan. 2022.

(J32) A. Fielbaum, R. Kucharski, O. Cats, and J. Alonso-Mora, "How to split the costs and charge the travellers sharing a ride? Aligning system's optimum with users' equilibrium", in European Journal of Operational Research, Nov. 2021.

(J31) A. Fielbaum, M. Kronmueller, and J. Alonso-Mora, "Anticipatory routing methods for an on-demand ridepooling mobility system", in Transportation, Sep. 2021.

(J30) A. Fielbaum, X. Bai and J. Alonso-Mora, "On-demand ridesharing with optimized pick-up and drop-off walking locations", in Transportation Research Part C: Emerging Technologies, May 2021.

(J29) H. Zhu, F. Martinez Claramunt, B. Brito and J. Alonso-Mora, "Learning Interaction-Aware Trajectory Predictions for Decentralized Multi-Robot Motion Planning in Dynamic Environments", IEEE Robotics and Automation Letters (RA-L), Mar. 2021.

(J28) O. de Groot, B. Brito, L. Ferranti, D. Gavrila and J. Alonso-Mora, "Scenario-Based Trajectory Optimization in Uncertain Dynamic Environments", IEEE Robotics and Automation Letters (RA-L), Mar. 2021.

(J27) B. Brito, M. Everett, J. P. How and J. Alonso-Mora, "Where to go next: Learning a Subgoal Recommendation Policy for Navigation in Dynamic Environments", IEEE Robotics and Automation Letters (RA-L), Mar. 2021.

(J26) Z. Chen, J. Alonso-Mora, X. Bai, D. D. Harabor and P. J. Stuckey, "Integrated Task Assignment and Path Planning for Capacitated Multi-Agent Pickup and Delivery", IEEE Robotics and Automation Letters (RA-L), Mar. 2021.

(J25) S. Park, M. Cap, J. Alonso-Mora, C. Ratti, and D. Rus "Social Trajectory Planning for Urban Autonomous Surface Vessels", in IEEE Transactions on Robotics (T-RO), Dec. 2020.

(J24) A. Fielbaum and J. Alonso-Mora, "Unreliability in ridesharing systems: Measuring changes in users' times due to new requests", in Transportation Research Part C: Emerging Technologies, Dec. 2020.

(J23) R. Kucharski, A. Fielbaum, J. Alonso-Mora and O. Cats, "If you are late, everyone is late: late passenger arrival and ride-pooling systems' performance", in Transportmetrica A: Transport Science, Oct. 2020.

(J22) N. D. Potdar, G. C. H. D. de Croon and J. Alonso-Mora, "Online Trajectory Planning and Control of a MAV Payload System in Dynamic Environments", Springer Autonomous Robots, June 2020.

(J21) H. Andersen, J. Alonso-Mora, Y.H. Eng, D. Rus and M. Ang, "Trajectory Optimization and Situational Analysis Framework for Autonomous Overtaking with Visibility Maximization", IEEE Transactions on Intelligent Vehicles (T-IV), vol. 5, no. 1, pp. 7-20, Mar. 2020.

(J20) W. Schwarting, A. Pearson, J. Alonso-Mora, S. Karaman, D. Rus, "Social behavior for autonomous vehicles", **Proceedings of the National Academy of Sciences USA (PNAS)**, Nov. 2019.

(J19) B. Brito, B. Floor, L. Ferranti and J. Alonso-Mora, "Model Predictive Contouring Control for Collision Avoidance in Unstructured Dynamic Environments", IEEE Robotics and Automation Letters (RA-L), vol. 4, no. 4, Oct. 2019.

(J18) H. Zhu and J. Alonso-Mora, "Chance-constrained Collision Avoidance for MAVs in Dynamic Environments", IEEE Robotics and Automation Letters (RA-L), vol. 4, no. 2, Apr. 2019.

(J17) T. Naegeli, S. Oberholzer, S. Pluess, J. Alonso-Mora and O. Hilliges, "Flycon: Real-time Environment-independent Multi-view Human Pose Estimation with Aerial Vehicles", ACM Transactions on Graphics (SIGGRAPH Asia), Dec. 2018.

(J16) S. Stevsic, T. Naegeli, J. Alonso-Mora, and O. Hilliges, "Sample Efficient Learning of Path Following and Obstacle Avoidance Behavior for Quadrotors", IEEE Robotics and Automation Letters (RA-L), vol. 3, no. 4, Oct. 2018.

(J15) W. Schwarting, J. Alonso-Mora, L. Paull, S. Karaman, and D. Rus, "Safe Nonlinear Trajectory Generation for Parallel Autonomy With a Dynamic Vehicle Model", IEEE Transactions on Intelligent Transportation Systems (T-ITS), vol. 19, no. 9, pp. 2994-3008, Sept. 2018.

(J14) J. Alonso-Mora, E. Montijano, T. Naegeli, O. Hilliges, M. Schwager and D. Rus "Distributed Multi-robot Formation Control in Dynamic Environments", Autonomous Robots, vol. 43, pp. 1079-1100 Jul. 2018.

(J13) W. Schwarting, J. Alonso-Mora and D. Rus, "Planning and Decision-Making for Autonomous Vehicles", Annual Review of Control, Robotics, and Autonomous Systems, vol. 1, pp. 187-210, May 2018.

(J12) J. Alonso-Mora, P. Beardsley and R. Siegwart, "Cooperative Collision Avoidance for Nonholonomic Robots", IEEE Transactions on Robotics (T-RO), vol. 34, no. 2, pp. 404-420, Apr. 2018.

(J11) J. Alonso-Mora, J. A. DeCastro, V. Raman, D. Rus, and H. Kress-Gazit, "Reactive mission and motion planning with deadlock resolution avoiding dynamic obstacles", Autonomous Robots, Special Issue on Online Decision Making in Multi-Robot Coordination, vol. 42, no. 4, pp. 801-824, Apr. 2018.

(J10) J. Alonso-Mora, S. Baker, and D. Rus, "Multi-robot formation control and object transport in dynamic environments via constrained optimization", The International Journal of Robotics Research (IJRR), vol. 36, no. 9, pp. 1000-1021, Aug. 2017.

(J9) T. Naegeli, L. Meier, A. Domahidi, J. Alonso-Mora, and O. Hilliges, "Real-time Planning for Automated Multi-View Drone Cinematography", ACM Transactions on Graphics (SIGGRAPH), vol. 36, no. 4, Article 132, Jul. 2017.

(J8) T. Naegeli, J. Alonso-Mora, A. Domahidi, D. Rus, and O. Hilliges, "Real-time Motion Planning for Aerial Videography with Dynamic Obstacle Avoidance and Viewpoint Optimization", IEEE Robotics and Automation Letters (RA-L), vol. 2, no. 3, pp. 1696-1703, Jan. 2017.

(J7) J. Alonso-Mora, S. Samaranayake, A. Wallar, E. Frazzoli, and D. Rus, "On-demand high-capacity ride-sharing via dynamic trip-vehicle assignment", **Proceedings National Academy of Science USA (PNAS)**, vol. 114, no. 3, pp. 462-467, Jan. 2017.

(J6) J. Brucker-Cohen, T. Bech, A. Rowe, G. Bushell, L. Birtles, C. Bennewith, O. Bown, D. Sun, P. Su, N. Roy, V. Jan, D. Morozov, T. Digumarti, J. Alonso-Mora, R. Siegwart, P. Beardsley, M. Jacobsen, D.A. Chanel, R. Constant and B. Grosser, "Data Materialities Art Gallery: Introduction and Gallery", in Leonardo, vol. 49, no. 4, pp. 352-374, MIT Press Journals, Aug. 2016.

(J5) J. Alonso-Mora, T. Naegeli, R. Siegwart, P. Beardsley, "Collision Avoidance for Aerial Vehicles in Multi-Agent Scenarios", in Autonomous Robots, vol. 39, no. 1, pp. 101-121, June 2015.

(J4) M. Rufli, J. Alonso-Mora, R. Siegwart, "Reciprocal Collision Avoidance with Motion Continuity Constraints", in IEEE Transactions in Robotics (T-RO), vol. 29, no. 4, pp. 899-912, Aug. 2013.

(J3) J. Alonso-Mora, A. Breitenmoser, M. Rufli, R. Siegwart, P. Beardsley, "Image and Animation Display with Multiple Robots", in International Journal of Robotics Research (IJRR), Vol 31, Issue 6, pp. 753-773, May 2012.

(J2) A. Schoellig, J. Alonso-Mora, R. D'Andrea, "Limited benefit of Sharing Information in Multi-Agent Iterative Learning Control", in Asian Journal of Control, vol. 14, no. 3, pp. 613-623, May 2012.

(J1) J. Alonso-Mora, A. Husar, M. Serra, J. Riera, "Numerical model for polymer electrolyte membrane fuel cells with experimental application and validation", in Asia Pacific Journal of Chemical Engineering, vol. 4, no. 1, pp. 55-67, Jan. 2009.

Conference proceedings

(C65) K. L. Voogd, J. P. Allamaa, J. Alonso-Mora and T. Son, "Reinforcement Learning from Simulation to Real World Autonomous Driving using Digital Twin", in IFAC World Congress, July 2023.

(C64) M. Spahn and J. Alonso-Mora, "Autotuning Symbolic Optimization Fabrics for Trajectory Generation", in IEEE Int. Conf. on Robotics and Automation (ICRA), May 2023.

(C63) O. de Groot, L. Ferranti, D. Gavrila and J. Alonso-Mora, "Globally Guided Trajectory Planning in Dynamic Environments", in IEEE Int. Conf. on Robotics and Automation (ICRA), May 2023.

(C62) K. Mustafa, O. de Groot, X. Wang, J. Kober and J. Alonso-Mora, "Probabilistic Risk Assessment for Chance-Constrained Collision Avoidance in Uncertain Dynamic Environments", in IEEE Int. Conf. on Robotics and Automation (ICRA), May 2023.

(C61) L. M. Streichenberg, E. Trevisan, J. J. Chung, R. Siegwart and J. Alonso-Mora, "Multi-Agent Path Integral Control for Interaction-Aware Motion Planning in Urban Canals", in IEEE Int. Conf. on Robotics and Automation (ICRA), May 2023.

(C60) S. Casao, A. Otero, A. Serra-Gómez, A. C. Murillo, J. Alonso-Mora and E. Montijano, "A Framework for Fast Prototyping of Photo-realistic Environments with Multiple Pedestrians", in IEEE Int. Conf. on Robotics and Automation (ICRA), May 2023.

(C59) W. Wang, A. Kemmeren, D. Son, J. Alonso-Mora and S. Gil, "Wi-Closure: Reliable and Efficient Search of Inter-robot Loop Closures Using Wireless Sensing", in IEEE Int. Conf. on Robotics and Automation (ICRA), May 2023.

(C58) X. Wang, Z. Li, J. Alonso-Mora and M. Wang, "Reachability-based confidence-aware probabilistic collision detection in highway driving", in 4th Symposium on Management of Future motorway and urban Traffic Systems (MFTS), Dec. 2022.

(C57) N. Wilde and J. Alonso-Mora, "Do we use the Right Measure? Challenges in Evaluating Reward Learning Algorithms", in Conference on Robot Learning (CoRL), Dec. 2022.

(C56) N. Wilde and J. Alonso-Mora, "Online Multi-Robot Task Assignment with Stochastic Blockages", in IEEE Conference on Decision and Control (CDC), Dec. 2022.

(C55) M. Kronmueller, A. Fielbaum and J. Alonso-Mora "Routing of Heterogeneous Fleets for Flash Deliveries via Vehicle Group Assignment", in Proc. 2022 IEEE - Int. Conf. on Intelligent Transportation (ITSC), Oct. 2022.

(C54) A. Botros, A. Sadeghi, N. Wilde, J. Alonso-Mora and S. L. Smith, "Error-Bounded Approximation of Pareto Fronts in Robot Planning Problems", in 15th Workshop on the Algorithmic Foundations of Robotics (WAFR), June 2022.

(C53) L. Peters, D. Fridovich-Keil, L. Ferranti, C. J. Alonso-Mora, F. Laine "Learning Mixed Strategies in Trajectory Games", Proc. of Robotics: Science and Systems (RSS), June 2022.

(C52) X. Wang, Z. Li, J. Alonso-Mora and M. Wang "Prediction-Based Reachability Analysis for Collision Risk Assessment on Highways", in IEEE Intelligent Vehicles Symposium (IV), June 2022.

(C51) J. de Vries, E. Trevisan, J. van der Toorn, T. Das, B. Brito, J. Alonso-Mora, "Regulations Aware Motion Planning for Autonomous Surface Vessels in Urban Canals", in Proc. IEEE Int. Conf. on Robotics and Automation (ICRA), May 2022.

(C50) M. Lodel, B. Brito, A. Serra-Gomez, L. Ferranti, R. Babuska, J. Alonso-Mora, "Where to Look Next: Learning Viewpoint Recommendations for Informative Trajectory Planning", in Proc. IEEE Int. Conf. on Robotics and Automation (ICRA), May 2022.

(C49) M. Kronmueller, A. Fielbaum and J. Alonso-Mora, "On-demand Grocery Delivery From Multiple Local Stores With Autonomous Robots", in Proc. 3rd IEEE International Symposium on Multi-Robot and Multi-Agent Systems (MRS'21), Nov. 2021.

(C48) A. Ray, A. Pierson, H. Zhu, J. Alonso-Mora and D. Rus "Multi-robot Task Assignment for Aerial Tracking with Viewpoint Constraints", in Proc. IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS), Oct. 2021.

(C47) P. Schuller, A. Fielbaum and J. Alonso-Mora, "Towards a geographically even level of service in on-demand ridepooling", in Proc. 2021 IEEE - Int. Conf. on Intelligent Transportation (ITSC), Sep. 2021.

(C46) H. Zhu, J. J. Chung, N. R. J. Lawrance, R. Siegwart and J. Alonso-Mora, "Online Informative Path Planning for Active Information Gathering of a 3D Surface", in Proc. IEEE Int. Conf. on Robotics and Automation (ICRA), May 2021.

(C45) M. Spahn, B. Brito and J. Alonso-Mora, "Coupled mobile manipulation via trajectory optimization with free space decomposition", in Proc. IEEE Int. Conf. on Robotics and Automation (ICRA), May 2021.

(C44) B. van den Berg, B. Brito, M. Alirezaei and J. Alonso-Mora, "Curvature Aware Motion Planning with Closed-Loop Rapidly-exploring Random Trees", in IEEE Intelligent Vehicles Symposium (IV), Mar. 2021.

(C43) B. Brito, H. Zhu, W. Pan and J. Alonso-Mora, "Social-VRNN: One-Shot Multi-modal Trajectory Prediction for Interacting Pedestrians", in 2020 Conference on Robot Learning (CoRL), Nov. 2020.

(C42) J. van Lochem, M. Kronmueller, P. van 't Hof and J. Alonso-Mora, "Anticipatory Vehicle Routing for Same-Day Pick-up and Delivery using Historical Data Clustering", in 2020 IEEE 23rd International Conference on Intelligent Transportation Systems (ITSC), Oct. 2020.

(C41) A. Serra-Gomez, B. Brito, H. Zhu, J. J. Chung and J. Alonso-Mora, "Whom to Communicate: Learning Efficient Communication for Multi-Robot Collision Avoidance", in Proc. IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS), Oct. 2020.

(C40) J. Lin, H. Zhu and J. Alonso-Mora, "Robust Vision-based Obstacle Avoidance for Micro Aerial Vehicles in Dynamic Environments", in Proc. IEEE Int. Conf. on Robotics and Automation (ICRA), May 2020.

(C39) A. de Ruijter, O. Cats, J. Alonso-Mora and S. Hoogendoorn, "Ride-Sharing Efficiency and Level of Service under Alternative Demand, Behavioral and Pricing Settings", in Proc. Transportation Research Board 2020 Annual Meeting, Jan. 2020.

(C38) A. Wallar, W. Schwartig, J. Alonso-Mora and D. Rus, "Optimizing Multi-class Fleet Compositions for Shared Mobility-as-a-Service", in Proc. IEEE Int. Conf. on Intelligent Transportation Systems (ITSC), Oct. 2019.

(C37) H. Zhu and J. Alonso-Mora, "B-UAVC: Buffered Uncertainty-Aware Voronoi Cells for Probabilistic Multi-Robot Collision Avoidance", in Proc. 2nd IEEE International Symposium on Multi-Robot and Multi-Agent Systems (MRS'19), Aug. 2019.

(C36) A. Wallar, J. Alonso-Mora and D. Rus, "Optimizing Vehicle Distributions and Fleet Sizes for Mobility-on-Demand", in Proc. IEEE Int. Conf. on Robotics and Automation (ICRA), May 2019.

(C35) H. Zhu, J. Juhl, L. Ferranti and J. Alonso-Mora, "Distributed Multi-Robot Formation Splitting and Merging in Dynamic Environments", in Proc. IEEE Int. Conf. on Robotics and Automation (ICRA), May 2019. **IEEE ICRA Best Paper Award on Multi-robot Systems**.

(C34) L. Ferranti, B. Brito, E. Pool, Y. Zheng, R. M. Ensing, R. Happee, B. Shyrokau, J. Kooij, J. Alonso-Mora, and D. M. Gavrila. "SafeVRU: A Research Platform for the Interaction of Self-Driving Vehicles with Vulnerable Road Users", in IEEE Intelligent Vehicles Symposium, June 2019.

(C33) D. Fiedler, M. Certicky, J. Alonso-Mora and M. Cap, "The Impact of Ridesharing in Mobility-on-Demand Systems: Simulation Case Study in Prague", in Proc. IEEE Int. Conf. on Intelligent Transportation Systems (ITSC), Nov. 2018.

(C32) A. Wallar, M. van der Zee, J. Alonso-Mora and D. Rus, "Vehicle Rebalancing for Mobility-on-Demand Systems with Ride-Sharing", in Proc. IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS), Oct. 2018.

(C31) M. Cap and J. Alonso-Mora, "Multi-Objective Analysis of Ridesharing in Automated Mobility-on-Demand", in Proc. Robotics: Science and Systems (RSS), June 2018.

(C30) L. Ferranti, R. R. Negenborn, T. Keviczky and J. Alonso-Mora, "Coordination of Multiple Vessels Via Distributed Nonlinear Model Predictive Control", in Proc. European Control Conference (ECC), June 2018.

(C29) B. Zhou, W. Schwarting, D. Rus, and J. Alonso-Mora, "Joint Multi-Policy Behavior Estimation and Receding-Horizon Trajectory Planning for Automated Urban Driving", in Proc. IEEE Int. Conf. on Robotics and Automation (ICRA), May 2018.

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