



**INSTITUTE FOR SYSTEMS AND ROBOTICS**



## ***Annual Report – 2020***

### ***Lisbon Pole***

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## 1. EXECUTIVE SUMMARY

During the year of 2020 there were no research and technological activities taking place in the framework of the Lisbon Pole of ISR, nor were financed through ISR (NIF 502 854 227). All the research activities were carried out in the context of the research unit ISR/IST where all contracts and activities took place at Instituto Superior Técnico.

For informative purposes only, we describe the scientific publications and doctoral theses that were produced by the research group hosted at the Instituto Superior Técnico, in spite of the fact that none of these activities were developed in the context the Lisbon Pole of ISR.

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## 2. PUBLICATIONS

### A. International Journals,

- [1] Guilherme Ramos, Daniel Silvestre, Carlos Silvestre, "General resilient consensus algorithms", *International Journal of Control*, Taylor & Francis online, 2020, 2020
- [2] Daniel Silvestre, "Reputation-based Method to Deal with Bad Sensor Data", *IEEE Control Systems Letters*, doi: 10.1109/LCSYS.2020.3048098, 2020 - PDF
- [3] Daniel Silvestre, Paulo Rosa, Carlos Silvestre, "Distinguishability of discrete-time linear systems", *International Journal of Robust Nonlinear Control*, Vol 31, Issue 5, 2020, 2020
- [4] Teng Ma, Li Ye, Zhao Yuxin, Jiang Yanqing, Zhang Qianyi, António Pascoal, "Efficient Bathymetric SLAM with Invalid Loop Closure Identification", *IEEE/ASME Transactions on Mechatronics*, 2020 doi: 10.1109/TMECH.2020.3043136, 2020
- [5] Clebeson Canuto, Plinio Moreno, J. Samatelo, Raquel Vassallo, José Santos-Victor, "Action Anticipation for Collaborative Environments: The Impact of Contextual Information and Uncertainty-Based Prediction", *Neurocomputing*, Elsevier (in Press), 2020 - PDF
- [6] Wei Xie, David Cabecinhas, Rita Cunha, Carlos Silvestre, "Cooperative Path Following Control of Multiple Quadcopters With Unknown External Disturbances", *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, doi: 10.1109/TSMC.2020.3032401, 2020
- [7] Carlos Fernandes, Nuno Fachada, J. L. J. Laredo, J. J. Merelo, Agostinho Rosa, "Population sizing of cellular evolutionary algorithms", *Swarm and Evolutionary Computation*, Vol. 58, 100721, 2020
- [8] Nuno Barroso Monteiro, João Barreto, José Gaspar, "Standard Plenoptic Cameras Mapping to Camera Arrays and Calibration based on DLT", *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, vol. 30, no. 11, pp. 4090-4099, November, 2020
- [9] Rodolfo Abreu, Joao Jorge, Alberto Leal, Thomas Koenig, Patrícia Figueiredo, "EEG Microstates Predict Concurrent fMRI Dynamic Functional Connectivity States", *Brain Topography* 34, pp 41–55, 2020, 2020
- [10] Yoeri Brouwer, Alberto Vale, Rodrigo Ventura, "Informative path planner with exploration–exploitation trade-off for radiological surveys in non-convex scenarios", *Robotics and Autonomous Systems* V.136, February 2021, 103691, 2020
- [11] Wei Xie, Joel Reis, David Cabecinhas, Carlos Silvestre, "Design and experimental validation of a nonlinear controller for underactuated surface vessels", *Nonlinear Dynamics* Vol. 102, pp 2563–2581, 2020, 2020
- [12] Nguyen Tuan Hung, António Pascoal, "Consensus/synchronisation of networked nonlinear multiple agent systems with event-triggered communications", *International Journal of Control*, 2020 - PDF
- [13] Dusan Jakovetic, Dragana Bajovic, João Xavier, Jose M. F. Moura, "Primal–Dual Methods for Large-Scale and Distributed Convex Optimization and Data Analytics", *Proc. of the IEEE*, Vol. 108, No. 11, pp. 1923-1938, November, 2020
- [14] Nguyen Tuan Hung, Naveena Crasta, David Moreno Salinas, António Pascoal, Tor A. Johansen, "Range-based target localization and pursuit with autonomous vehicles: An approach using posterior CRLB and model predictive control", *Robotics and Autonomous Systems*, Elsevier, Volume 132, 2020, 2020 - PDF
- [15] Gonçalo Victorino, Ricardo Braga, José Santos-Victor, Carlos Lopes, "Yield components detection and image-based indicators for non-invasive grapevine yield prediction at different phenological phases", *Oeno One*, Vol. 54, Issue 4, October, 2020
- [16] Xiaojun Mei, Huafeng Wu, Jiangfeng Xian, Bowen Chen, "RSS-based Byzantine Fault-tolerant Localization Algorithm under NLOS Environment", *IEEE Communications Letters*, vol. 25, no. 2, pp. 474-478, 2020, doi: 10.1109/LCOMM.2020.3027904., 2020 - PDF
- [17] Francisco Rego, Ye Pu, Andrea Alessandretti, António Pedro Aguiar, António Pascoal, Colin Jones, "A Distributed Luenberger Observer for Linear State Feedback Systems with Quantized and Rate-limited Communications", *IEEE Transactions on Automatic Control*, doi: 10.1109/TAC.2020.3027658, 2020

- [18] Fabio Louza, Harry A. DeFerrari, "Superimposed training low probability of detection underwater communications", *Journal of the Acoustical Society of America Express Letters*, Vol. 148, pp. EL273-EL278, September, 2020
- [19] Enrico Simetti, G. Indiveri, António Pascoal, "WiMUST: A Cooperative Marine Robotic System for Autonomous Geotechnical Surveys", *Journal of Field Robotics*, Vol 38; pp 268-288, 2020
- [20] Daniel Viegas, Pedro Batista, Paulo Oliveira, Carlos Silvestre, "Distributed controller design and performance optimization for discrete-time linear systems", *Optimal Control Applications and Methods*, Vol 42, Issue 1, 2020, 2020 - PDF
- [21] Ana R. Oliveira,, R. G. Nunes, Patrícia Figueiredo, Ana I. Dias, Alberto Leal, "Regional White Matter Atrophy Correlates with Spike Activity in Encephalopathy Related to Status Epilepticus During Slow Sleep (ESES) After Early Thalamic Lesions", *Brain Topography* volume 33, 571–585, September, 2020
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- [23] Carlos Santiago, Catarina Barata, Michele Sasdelli, Gustavo Carneiro, Jacinto Nascimento, "LOW: Training Deep Neural Networks by Learning Optimal Sample Weights", *Pattern Recognition*, Elsevier, Vol.110 , 2020 - PDF
- [24] Vanessa R Blair, João Sanches, et al., "Hereditary diffuse gastric cancer: updated clinical practice guidelines", *The Lancet oncology*, Vol.21, Issue 8, pp. 386-397, 2020, 2020
- [25] Daniel Silvestre, Paulo Rosa, João Pedro Hespanha, Carlos Silvestre, "Stochastic and Deterministic State-Dependent Social Networks", *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, doi: 10.1109/TSMC.2020.3004848, 2020 - PDF
- [26] Luis Mendes, Alexandre Bernardino, Rui Ferreira, "piv-image-generator: An image generating software package for planar PIV and Optical Flow benchmarking", *SoftwareX*, Volume 12, July, 2020
- [27] J. Leote, R. Loução, C. Viegas, M. H. Lauterbach, A. Perez-Hick, J. Monteiro, Rita Gouveia Nunes, H. A. Ferreira, "Impact of navigated task-specific fMRI on direct cortical stimulation", *Journal of Neurological Surgery. Part A: Central European Neurosurgery* 81(06), July, 2020
- [28] Daniel Silvestre, João Pedro Hespanha, Carlos Silvestre, "Resilient Desynchronization for Decentralized Medium Access Control", *IEEE Control Systems Letters*, vol. 5, no. 3, pp. 803-808, July 2021, doi: 10.1109/LCSYS.2020.3005819, 2020 - PDF
- [29] Nuno Pessanha Santos, V. Lobo, Alexandre Bernardino, "Two-stage 3D model-based UAV pose estimation: A comparison of methods for optimization", *Journal of Field Robotics*, Vol. 37, Issue 4, pp. 580-605, June, 2020
- [30] Sérgio Jesus, F. C. Xavier, R. P. Vio, J. Osowsky, M. V. S. Simões, E. B. F. Netto, "Particle motion measurements near a rocky shore off Cabo Frio Island", *The Journal of the Acoustical Society of America*, Vol. 147, pp. 4009-4019, June, 2020
- [31] Janir Cruz, Ophélie Favrod, Maya Roinishvili, Eka Chkonia, Andreas Brand, Christine Mohr, Patrícia Figueiredo, Michael H. Herzog, "EEG microstates are a candidate endophenotype for schizophrenia", *Nature Communications*, vol. 11, 3089, June, 2020
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- [33] Giovanni Corso, João Sanches, et al., "Hereditary Gastric and Breast Cancer Syndromes Related to CDH1 Germline Mutation: A Multidisciplinary Clinical Review", *Cancers*, Vol 12, p 1598, 2020, 2020
- [34] Pedro Miraldo, João Cardoso, "On the Generalized Essential Matrix Correction: An efficient solution to the problem and its applications", *Journal of Mathematical Imaging and Vision* volume 62, pp. 1107–1120, 2020
- [35] Ricardo Leitão, Carla Guerreiro, Rita Gouveia Nunes, Nilza Gonçalves, Giulia Galati, Madalena Rosário, Leonor Guedes, Joaquim Ferreira, Sofia Reimão, "Neuromelanin Magnetic Resonance Imaging of the Substantia Nigra in Huntington's Disease", *Journal of Huntington's Disease*, vol. 9, no. 2, pp. 143-148, 2020
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- [39] Nuno Fachada, Agostinho Rosa, "generateData—A 2D data generator", *Software Impacts*, Vol. 4, 100017, 2020
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- [41] Tiago Silva, Pedro Batista, "Long baseline navigation filter with clock offset estimation", *Nonlinear Dynamics*, vol. 100, pp. 2557-2573, 2020, 2020 - PDF
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- [44] Ibrahim Youssef, Mehmet Mutlu, Behzad Bayat, Alessandro Crespi, Simon Hauser , Jörg Conradt, Alexandre Bernardino, Auke Ijspeert, "A Neuro-Inspired Computational Model for a Visually Guided Robotic Lamprey Using Frame and Event Based Cameras", *IEEE Robotics and Automation Letters*, Vol.5, Issue 2, pp. 2395-2402, April, 2020
- [45] José Acevedo, João Messias, Jesús Capitán, Rodrigo Ventura, Luis Merino, Pedro Lima, "A Dynamic Weighted Area Assignment based on a Particle Filter for Active Cooperative Perception", *IEEE Robotics and Automation Letters*, Vol. 5, No. 2, pp. 736-743, 2020
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- [47] Martim Brandão, Rui Figueiredo, Kazuki Takagi, Alexandre Bernardino, Kenji Hashimoto , Atsuo Takanishi , "Placing and scheduling many depth sensors for wide coverage and efficient mapping in versatile legged robots", *The International Journal of Robotics Research*, Vol. 39, Issue 4, pp. 431-460, March, 2020
- [48] Joel Reis, Pedro Batista, Paulo Oliveira, Carlos Silvestre, "Kalman filter cascade for attitude estimation on rotating Earth", *IEEE/ASME Transactions on Mechatronics*; Vol 25, nº. 1, pp. 327-338, 2020
- [49] He Hao, Daniel Silvestre, Carlos Silvestre, "A microscopic-view Infection model based on linear systems", *Information Sciences*, Elsevier, Volume 510, pages 1-15, 2020, 2020 - PDF
- [50] Nguyen Tuan Hung, António Pascoal, Tor A. Johansen, "Cooperative path following of constrained autonomous vehicles with model predictive control and event-triggered communications", *International Journal of Robust and Nonlinear Control*, Volume 30, pages 2644-2670, 2020 - PDF
- [51] J. Juliano, R. Spicer, Athanasios Vourvopoulos, S. Lefebvre, K. Jann, T. Ard, E. Santarnecchi, D. Krum, S.-L. Liew, "Embodiment Is Related to Better Performance on a Brain–Computer Interface in Immersive Virtual Reality: A Pilot Study", *Sensors* 2020, 20(4), 1204, February, 2020
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- [53] Nuno Pessanha Santos, Victor Lobo, Alexandre Bernardino, "Directional statistics for 3D Model-Based UAV Tracking", *IEEE Access*, Vol.8, pp. 33884-33897, 2020
- [54] Janir Cruz, Albulena Shaqiri , Maya Roinishvili, Ophélie Favrod, Eka Chokonia, Andreas Brand , Patrícia Figueiredo, Michael H. Herzog, "Neural compensation mechanisms of siblings of schizophrenia patients as revealed by high-density EEG", *Schizophrenia Bulletin*, sbz133, 2020
- [55] Lucas Balthazar, João Xavier, Bruno Sinopoli, "Distributed linear estimation via a roaming token", *IEEE Transactions on Signal Processing*, Vol. 68, pp. 780-792, January, 2020

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## B. International Conferences,

- [1] Guilherme Ramos, Daniel Silvestre, Carlos Silvestre, "A general discrete-time method to achieve resilience in consensus algorithms", *Proc. of CDC 2020 - 59th IEEE Conference on Decision and Control (virtual)*, Jeju Island, Republic of Korea , 2020 - PDF
- [2] Zhiqi Tang, Rita Cunha, Tarek Hamel, Carlos Silvestre, "Bearing-only formation control under persistence of excitation", *59th IEEE Conference on Decision and Control (CDC)*, Jeju, pp. 4011-4016, 2020, 2020
- [3] Joel Reis, Carlos Silvestre, Pedro Batista, Paulo Oliveira, "Attitude observers aided by implicit measurements of the Earth angular velocity", *IEEE Conference on Decision and Control (CDC)*, Jeju, 2020, pp. 1300-1305, doi: 10.1109/CDC42340.2020.9304161, 2020
- [4] Fabricio A. Bozzi, Sérgio Jesus, "Vector Sensor Beam Steering for Underwater Acoustic Communication", *Proc. of 179th Meeting of the Acoustical Society of America (virtual)*, 2020
- [5] Tanmay Verlekar, Alexandre Bernardino, "Video based fire detection using Xception and ConvLSTM", *Lecture Notes in Computer Science*, vol 12510. Springer, Cham. , 2020
- [6] André Martins, António Farinhas, Marcos Treviso, Vlad Niculae, Pedro Aguiar, M. A. T. Figueiredo, "Sparse and Continuous Attention Mechanisms", *Proc. of NeurIPS 2020 - 34th Conference on Neural Information Processing Systems* , 2020
- [7] Siddhant Ranade, Xin Yu, Shantnu Kakkar, Pedro Miraldo, Srikumar Ramalingam, "Mapping of Sparse 3D Data using Alternating Projection", *Proc. Asian Conf. Computer Vision (ACCV)*, 2020. , 2020
- [8] I. Gil, Alexandre Bernardino, M. Nunes , Heitor Cardoso, I. Pinto, "The Usability of Virtual Reality Platforms in Immersive Environments (Exergames) – A Pilot Study in Children With Cerebral Palsy", *32nd European Academy of Childhood Disability*, 2020 , 2020
- [9] Lino Pereira, Bernardo Ferreira, Alexandre Bernardino, "Real-Time 3D Tracking of Simple Objects with an RGB Camera", *26th Portuguese Conference on Pattern Recognition. Évora*, 2020 (poster), 2020
- [10] Luis Chambino, Alexandre Bernardino, João Silva, "Multispectral Images Applied to Face Recognition", *26th Portuguese Conference on Pattern Recognition. Évora*, 2020 (poster), 2020
- [11] Ana Rita Coias, Alexandre Bernardino, "Assessment of Motor Compensation Patterns in Stroke Rehabilitation Exercises", *26th Portuguese Conference on Pattern Recognition. Évora*, 2020, 2020
- [12] Alexandre Filipe, Alexandre Bernardino, Plinio Moreno, "Learning to Grasp Objects in Virtual Environments through Imitation.", *26th Portuguese Conference on Pattern Recognition. Évora*, 2020 (poster), 2020
- [13] Gonçalo Cunha, Alexandre Bernardino, Pedro Vicente, Ricardo Ribeiro, Plinio Moreno, "Active robot Learning for Efficient Body-Schema Online Adaptation", *26th Portuguese Conference on Pattern Recognition. Évora*, 2020 (poster), 2020
- [14] Bernardo Amaral, Alexandre Bernardino, Catarina Barata, "Fire and Smoke Detection in Aerial Images", *26th Portuguese Conference on Pattern Recognition. Évora*, 2020, 2020
- [15] Gonçalo Perrolas, Alexandre Bernardino, Ricardo Ribeiro, "Fire and Smoke Detection using CNN's trained with Fully Supervised methods and Search by Quad-Tree.", *26th Portuguese Conference on Pattern Recognition. Évora*, 2020, 2020
- [16] Bernardo Santana, Alexandre Bernardino, Ricardo Ribeiro, "Direct Georeferencing of Fire Front Aerial Images using Iterative Ray-Tracing and a Bearings-Range Extended Kalman Filter", *26th Portuguese Conference on Pattern Recognition. Évora*, 2020, 2020
- [17] Carlos Pires, Alexandre Bernardino, Bruno Damas, "Ship Segmentation in Aerial Images for Maritime Surveillance", *26th Portuguese Conference on Pattern Recognition. Évora*, 2020, 2020

- [18] Pedro Ribeiro, Susana Cardoso, Alexandre Bernardino, "Fruit quality control by surface analysis using a bio-inspired soft tactile sensor", 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Las Vegas, 2020, 2020
- [19] Nuno Duarte, Konstantinos Chatzilygeroudis, José Santos-Victor, Aude Billard, "From human action understanding to robot action execution: How the physical properties of handled objects modulate non-verbal cues", Proc. of ICDL-EPIROB 2020 - Joint IEEE 10th International Conference on Development and Learning and Epigenetic Robotics, Virtual Conference, 2020
- [20] Inês Lourenço, Rodrigo Ventura, Bo Wahlberg, "Teaching robots to perceive time: A twofold learning approach.", IEEE International Conference on Development and Learning and Epigenetic Robotics (ICDL-EpiRob), 2020. (Best Paper Award), 2020
- [21] Carlos Azevedo, Bruno Lacerda, Nick Hawes, Pedro Lima, "Long-Run Multi-Robot Planning under Uncertain Action Durations for Persistent Tasks", 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2020), Las Vegas, NV, USA,, 2020
- [22] Adriana Fernandes, Rodrigo Ventura, "Human-robot collaboration in microgravity: The object handover problem", Proceedings of the International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS), 2020, 2020
- [23] Razi Sabara, Cristiano Soares, Friedrich Zabel, J. Oliveira, Sérgio Jesus, "Automatic acoustic target detection and classification off the coast of Portugal", Proc. of IEEE/MTS Global Oceans, Singapore, 2020
- [24] Fabio Louza, Sérgio Jesus, "Coherence as a criterion for multichannel combining in low SNR communications in an upwelling environment", Proc. of IEEE/MTS Global Oceans, Singapore, 2020
- [25] Xinhua Cheng, Orlando Rodriguez, Lilun Zhang, "3D underwater source localization based on parabolic equation model combined with matched-field processing technology", Proc. of IEEE/MTS Global Oceans, Singapore, 2020
- [26] Cristiano Soares, Ricardo Duarte, Friedrich Zabel, Mónica A, Silva, Sérgio Jesus, "Shipping noise predictions from AIS in the Faial-Pico area, Azores archipelago", Proc. of IEEE/MTS Global Oceans, Singapore, 2020
- [27] Francisco Calisto, Nuno Nunes, Jacinto Nascimento, "BreastScreening: On the Use of Multi-Modality in Medical Imaging Diagnosis", Proc. of AVI 2020 - International Conference on Advanced Visual Interfaces, Ischia, Italy, 2020
- [28] Rafael Ribeiro, Daniel Silvestre, Carlos Silvestre, "A Rendezvous Algorithm for Multi-agent Systems in Disconnected Network Topologies", Proc. of MED 2020 - 28th Mediterranean Conference on Control and Automation, Saint-Raphaël, France, 2020
- [29] Nuno Ferreira, Margarida Silveira, "Ship Detection in SAR Images Using Convolutional Variational Autoencoders", Proc. of IGARSS - IEEE International Geoscience and Remote Sensing Symposium, Hawaii, USA, 2020
- [30] Cristiano Soares, Ricardo Duarte, Mónica A, Silva, Miriam Romagosa, Sérgio Jesus, "Shipping noise in the Azores: a threat to the Faial-Pico cetacean community?", Proc. of ICUA 2020 - International Conference on Underwater Acoustics, Southampton, UK, 2020
- [31] Min Lee, Daniel Siewiorek , Alexandre Bernardino, A. Smailagic, S. Bermúdez i Badia, "Designing Personalized Interactions of a Socially Assistive Robot for Stroke Rehabilitation Therapy", IEEE International Conference on Robotics and Automation (ICRA), Workshop on Social Robotics for Neurodevelopmental Disorders. 2020, 2020
- [32] Pedro Ribeiro, Susana Cardoso, Alexandre Bernardino, "Highly sensitive bio-inspired sensor for fine surface exploration and characterization", IEEE International Conference on Robotics and Automation (ICRA), Paris, pp. 625-631, 2020 , 2020
- [33] Jennifer Renoux, Tiago Veiga, Pedro Lima, Matthijs Spaan, "A Unified Decision-Theoretic Model for Information Gathering and Communication Planning", 29th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2020), Aug 31-Sept 4, 2020 - online, 2020
- [34] Teresa Bucho, Gina Caetano, Athanasios Vourvopoulos, Floriana Accoto, Inês Esteves, Agostinho Rosa, Patrícia Figueiredo, "Comparison of Visual and Auditory Modalities for Upper-Alpha EEG-Neurofeedback", Proc. of 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Berlin, Germany, 2020

- [35] Hemaxi Narotamo, Maria Sofia Fernandes, João Sanches, Margarida Silveira, "Interphase Cell Cycle Staging using Deep Learning", Proc. of EMBC - 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Montreal, Canada, 2020
- [36] Hemaxi Narotamo, João Sanches, Margarida Silveira, "Combining Deep Learning with Handcrafted Features for Cell Nuclei Segmentation", Proc. of EMBC - 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Montreal, Canada, 2020
- [37] Zhiqi Tang, Rita Cunha, Tarek Hamel, Carlos Silvestre, "Bearing leader-follower formation control under persistence of excitation", Proc. of 21st IFAC World Congress, Berlin, Germany, 2020
- [38] Pedro Trindade, Rita Cunha, Pedro Batista, "Distributed Formationcontrol of Double-Integrator Vehicles with Disturbance Rejection", Proc. of 21st IFAC World Congress, Berlin, Germany, 2020 - PDF
- [39] David Santos, Pedro Batista, "Cooperative Navigation Based on Bearing and Range Measurements to Different Vehicles", Proc. of 21st IFAC World Congress, Berlin, Germany, 2020 - PDF
- [40] Wei Xie, David Cabecinhas, Rita Cunha, Carlos Silvestre, "Global Practical Tracking for a Hovercraft with Unmeasured Linear Velocity and Disturbances", 21st IFAC World Congress, Berlin, 2020, 2020 - PDF
- [41] Min Lee, Daniel Siewiorek , A. Smailagic, Alexandre Bernardino, "An Exploratory Study on Techniques for Quantitative Assessment of Stroke Rehabilitation Exercises", Proceedings of the 28th ACM Conference on User Modeling, Adaptation and Personalization, 2020, 2020
- [42] Pedro Batista, "Navigation and source Localization based on single Pseudo-Ranges with an Unknown Multiplicative Factor", Proc. of 21st IFAC World Congress, Berlin, Germany, 2020., 2020 - PDF
- [43] Pedro Batista, "Navigation and Source Localization based on Single Pseudo-Ranges", 2020 American Control Conference (ACC), Denver, 2020, pp. 5237-5242, doi: 10.23919/ACC45564.2020.9148010, 2020
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- [45] Pedro Casau, Rita Cunha, Carlos Silvestre, "Improved Maneuverability for Multirotor Aerial Vehicles using Globally Stabilizing Feedbacks", 2020 American Control Conference (ACC), Denver, 2020, pp. 3822-3827, doi: 10.23919/ACC45564.2020.9147743, 2020 - PDF
- [46] Steve, Pedro Casau, Carlos Silvestre, "Global Trajectory Tracking for a Quadrotor through Event-Triggered Control : Synthesis, Simulations, and Experiments", 2020 American Control Conference (ACC), Denver, 2020, pp. 3822-3827, doi: 10.23919/ACC45564.2020.9147743, 2020 - PDF
- [47] Pedro Cruz, Pedro Batista, "Special Cases in the Attitude Determination of Three-Vehicle Heterogeneous Formations", 2020 7th International Conference on Control, Decision and Information Technologies (CoDIT), Prague, 2020, pp. 136-141, doi: 10.1109/CoDIT49905.2020.9263956, 2020 - PDF
- [48] Rafael Ribeiro, Daniel Silvestre, Carlos Silvestre, "Decentralized Control for Multi-agent Missions Based on Flocking Rules", Proc. of CONTROLO 2020 - 14th APCA International Conference on Automatic Control and Soft Computing, Bragança Portugal, 2020
- [49] Rogério Calazan, Orlando Rodriguez, Sérgio Jesus, "Numerical Enhancements and Parallel GPU Implementation of a 3D Gaussian Beam Model", Proc. of ICSSA 2020 - The 20th International Conference on Computational Science and Applications, Cagliari, Italy, 2020
- [50] A. Nunes, Rui Figueiredo, Plinio Moreno, "Learning to search for objects in images from human gaze sequences", Proc. of ICIAR 2020 - 17th International Conference on Image Analysis and Recognition, Virtual Conference, 2020
- [51] Lourenço V. Pato, Renato M. P. Negrinho, Pedro Aguiar, "Seeing without Looking: Contextual Rescoring of Object Detections for AP Maximization", Proc. of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), Seattle, USA, 2020
- [52] Catarina Barata, Carlos Santiago, "How Important Is Each Dermoscopy Image?", ISIC Skin Image Analysis Workshop at IEEE International Conference on Computer Vision and Pattern Recognition, Virtual Conference, 2020



- [53] Diogo de Andrade, Nuno Fachada, "Fun Maths for All Game Development Students", ITiCSE '20: Proceedings of the 2020 ACM Conference on Innovation and Technology in Computer Science Education., 2020
- [54] Nuno Fachada, Nélio Códices, "Top-down Design of a CS Curriculum for a Computer Games BA", ITiCSE '20: Proceedings of the 2020 ACM Conference on Innovation and Technology in Computer Science Education., 2020
- [55] Ana Raquel Carmo, Jean-Alexis Delamer, Yoko Watanabe, Rodrigo Ventura, Caroline Chanel, "Entropy-based adaptive exploit-explore coefficient for monte-carlo path planning", Proc. of Prestigious Applications of Intelligent Systems (PAIS@ECAI-2020), 2020
- [56] G. Dias Pais, Srikumar Ramalingam, Venu Govindu, Jacinto Nascimento, Rama Chellappa, Pedro Miraldo, "3DRegNet: A Deep Neural Network for 3D Point Registration", IEEE/CVF Conf. Computer Vision and Pattern Recognition (CVPR), 2020
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