Curriculum Vitæ

Informazioni personali

Nome	OPROMOLLA Roberto

Titoli di studio

Data di conseguimento	23/05/2016
Titolo conseguito	Dottore di ricerca
Voto conseguito	Eccellente
Titolo della Tesi	Advanced LIDAR-based techniques for autonomous navigation of spaceborne and airborne platforms
Titolo dottorato	INGEGNERIA AEROSPAZIALE, NAVALE E DELLA QUALITÀ
Nome e indirizzo istituzione	Università degli Studi di Napoli Federico II - C.so Umberto I, 40 - NAPOLI

Data di conseguimento	17/02/2012
Titolo conseguito	Laurea specialistica/magistrale
Voto conseguito	110/110 e Lode
Classe di laurea	25/S Classe delle lauree specialistiche in ingegneria aerospaziale e astronautica
Nome e indirizzo istituzione	Università degli Studi di Napoli Federico II - C.so Umberto I, 40 - NAPOLI

Esperienze

Periodo	03/06/2019 - oggi
Posizione	Ricercatore universitario a t.d.
Qualifica	Ricercatore a t.d. - t.pieno (art. 24 c.3-a L. 240/10)
Nome e indirizzo istituzione	Università degli Studi di Napoli Federico II - C.so Umberto I, 40 - NAPOLI
Struttura	Dip. L.240/2010 Ingegneria Industriale

Periodo	01/04/2018 - 31/03/2019
Posizione	Assegnista di ricerca
Nome e indirizzo istituzione	Università degli Studi di Napoli Federico II - C.so Umberto I, 40 - NAPOLI
Struttura	Dip. L.240/2010 Ingegneria Industriale

Periodo	01/04/2017 - 31/03/2018
Posizione	Assegnista di ricerca
Nome e indirizzo istituzione	Università degli Studi di Napoli Federico II - C.so Umberto I, 40 - NAPOLI
Struttura	Dip. L.240/2010 Ingegneria Industriale

Periodo	01/04/2016 - 31/03/2017
Posizione	Assegnista di ricerca
Nome e indirizzo istituzione	Università degli Studi di Napoli Federico II - C.so Umberto I, 40 - NAPOLI
Struttura	Dip. L.240/2010 Ingegneria Industriale

Periodo	30/04/2013 - 29/04/2016
Posizione	Dottorando
Nome e indirizzo istituzione	Università degli Studi di Napoli Federico II - C.so Umberto I, 40 - NAPOLI
Struttura	Dip. L.240/2010 Ingegneria Industriale
Titolo dottorato	INGEGNERIA AEROSPAZIALE, NAVALE E DELLA QUALITÀ

Elenco dei prodotti della ricerca

Alessia Nocerino, Roberto Opromolla, Giancarmine Fasano, Michele Grassi (2021). LIDAR pointing and parameters control for close proximity operations with uncooperative target. In: 2021 IEEE 8th International Workshop on Metrology for AeroSpace (MetroAeroSpace). p. 328-333, IEEE, ISBN: 978-1-7281-7556-0, Virtuale, 23 - 25 Giugno 2021, doi: 10.1109/MetroAeroSpace51421.2021.9511683

Alessia Nocerino, Roberto Opromolla, Giancarmine Fasano, Michele Grassi (2021). LIDAR-based multi-step approach for relative state and inertia parameters determination of an uncooperative target. ACTA ASTRONAUTICA, vol. 181, p. 662-678, ISSN: 0094-5765, doi: 10.1016/j.actaastro.2021.02.019

Federica Vitiello, Flavia Causa, Roberto Opromolla, Giancarmine Fasano (2021). Onboard and External Magnetic Bias Estimation for UAS through CDGNSS/Visual Cooperative Navigation. SENSORS, vol. 21, ISSN: 1424-8220, doi: 10.3390/s21113582

Flavia Causa, Roberto Opromolla, Giancarmine Fasano (2021). Cooperative navigation and visual tracking with passive ranging for UAV flight in GNSS-challenging environments. In: Proceedings of the 2021 International

Conference on Unmanned Aircraft Systems (ICUAS). IEEE, ISBN: 978-1-6654-4704-1, Atene, Grecia, 15-18 Giugno 2021, doi: 10.1109/ICUAS51884.2021.9476681

Giancarmine Fasano, Flavia Causa, Roberto Opromolla, Marcello Asciolla, Marco Nisi, Leonardo Pozzoli, Marco Lisi, Alberto Mennella, Graziano Gagliarde, Gianluca Luisi, Pere Molina, Marta Blàzquez, Ismael Colomina, Pedro Cabrera, Gustavo Rodriguez, Riccardo Poggi, Luigi Lisi, Giulia Fagioli, Roberto Muscinelli (2021). AMPERE: exploiting Galileo for electrical asset mapping in emerging countries. In: 2021 IEEE 8th International Workshop on Metrology for AeroSpace (MetroAeroSpace). p. 709-714, IEEE, ISBN: 978-1-7281-7556-0, Virtuale, 23 - 25 Giugno 2021, doi: 10.1109/MetroAeroSpace51421.2021.9511736

Giorgio Isoletta, Carlo Lombardi, Roberto Opromolla, Giancarmine Fasano, Moreno Peroni, Alessandro Panico, Andrea Cecchini, Antonio Romano, Aniello Basile, Walter Matta (2021). Metrological characterization of ground-based sensors for space surveillance and tracking. In: 2021 IEEE 8th International Workshop on Metrology for AeroSpace (MetroAeroSpace). p. 585-590, IEEE, ISBN: 978-1-7281-7556-0, Virtuale, 23 - 25 Giugno 2021, doi: 10.1109/MetroAeroSpace51421.2021.9511662

Nicola Cimmino, Giorgio Isoletta, Roberto Opromolla, Giancarmine Fasano, Aniello Basile, Antonio Romano, Moreno Peroni, Alessandro Panico, Andrea Cecchini (2021). Tuning of NASA standard breakup model for fragmentation events modelling. AEROSPACE, vol. 8, p. 1-21, ISSN: 2226-4310, doi: 10.3390/aerospace8070185

Alessia Nocerino, Roberto Opromolla, Giancarmine Fasano, Michele Grassi (2020). Analysis of LIDAR-based relative navigation performance during close-range rendezvous toward an uncooperative spacecraft. In: 2020 IEEE 7th International Workshop on Metrology for AeroSpace (MetroAeroSpace). p. 446-451, Institute of Electrical and Electronics Engineers Inc., ISBN: 978-1-7281-6636-0, Conferenza virtuale, doi: 10.1109/MetroAeroSpace48742.2020.9160326

Alessia Nocerino, Roberto Opromolla, Michele Grassi

(2020). Robust relative navigation scheme for the autonomous flight in close proximity of an uncooperative space target. In: Proceedings of the 2nd International Conference on Space Situational Awareness. Arlington, VA, USA, 14-16 January 2020

Davide Mango, Roberto Opromolla, Christoph Schmitt (2020). Hazard detection and landing site selection for planetary exploration using LIDAR. In: 2020 IEEE 7th International Workshop on Metrology for AeroSpace (MetroAeroSpace). p. 392-397, Institute of Electrical and Electronics Engineers Inc., ISBN: 978-1-7281-6636-0, Conferenza virtuale, 22 - 24 Giugno 2020, doi: 10.1109/MetroAeroSpace48742.2020.9160010

Giancarmine Fasano, Flavia Causa, Roberto Opromolla, Elisa Capello, Davide Carminati, Adriano Mancini, Alessandro Galdelli (2020). CREATEFORUAS: Developing Innovative Technologies for Autonomous UAS. In: 2020 IEEE 7th International Workshop on Metrology for AeroSpace (MetroAeroSpace). p. 325-330, Institute of Electrical and Electronics Engineers Inc., ISBN: 978-1-7281-6636-0, Conferenza virtuale, 22 - 24 Giugno 2020, doi: 10.1109/MetroAeroSpace48742.2020.9160321

Roberto Opromolla (2020). Magnetometer calibration for small unmanned aerial vehicles using cooperative flight data. SENSORS, vol. 20, p. 1-17, ISSN: 1424-8220, doi: 10.3390/s20020538

A. Renga, G. Fasano, M. Grasso, M. Graziano, M. Grassi, A. Moccia, G. Rufino, R. Opromolla (2019). End-to-end space system demonstration concepts for a distributed SAR by small formation flying satellites. In: Proceedings of the International Astronautical Congress, IAC. PROCEEDINGS OF THE INTERNATIONAL ASTRONAUTICAL CONGRESS, vol. 2019, Parigi:International Astronautical Federation, IAF, ISSN: 0074-1795, USA, 2019

Davide Maria Perfetto, Roberto Opromolla, Michele Grassi, Christoph Schmitt (2019). LIDAR-based model reconstruction for spacecraft pose determination. In: Proceedings of the 6th IEEE International Workshop on

Metrology for AeroSpace. p. 1-6, Institute of Electrical and Electronics Engineers Inc., ISBN: 978-1-7281-1344-9, Torino, 19 - 21 Giugno 2019, doi: 10.1109/MetroAeroSpace.2019.8869585

NOCERINO, ALESSIA, Roberto Opromolla, Michele Grassi, Giancarmine Fasano, Giancarlo Rufino (2019). LIDAR-BASED RELATIVE NAVIGATION IN CLOSE-PROXIMITY OF UNCOOPERATIVE SPACE TARGET. In: Proceedings of the AIDAA 2019 XXV International Conference. p. 1-8, AIDAA, Roma, 9 - 12 Settembre 2019

Opromolla R., Fasano G., Accardo D. (2019). Conflict detection performance of non-cooperative sensing architectures for small UAS sense and avoid. In: Integrated Communications, Navigation and Surveillance Conference, ICNS. vol. 2019-, p. 1-12, Institute of Electrical and Electronics Engineers Inc., ISBN: 978-1-7281-1893-2, usa, 2019, doi: 10.1109/ICNSURV.2019.8735113

Pesce, Vincenzo, Opromolla, Roberto, Sarno, Salvatore, Lavagna, Michèle, Grassi, Michele (2019). Autonomous relative navigation around uncooperative spacecraft based on a single camera. AEROSPACE SCIENCE AND TECHNOLOGY, vol. 84, p. 1070-1080, ISSN: 1270-9638, doi: 10.1016/j.ast.2018.11.042

Roberto Opromolla, Francesco Russo, Giancarmine Fasano, Giancarlo Rufino, Michele Grassi (2019). Safe trajectory design and pose estimation for target monitoring in GEO. JOURNAL OF SPACE SAFETY ENGINEERING, vol. 6, p. 188-196, ISSN: 2468-8975, doi: 10.1016/j.jsse.2019.07.001

Roberto Opromolla, Giancarmine Fasano, Domenico Accardo (2019). Experimental assessment of vision-based sensing for small UAS sense and avoid. In: Proceedings of the 38th IEEE/AIAA Digital Avionics Systems Conference (DASC). p. 1-9, Institute of Electrical and Electronics Engineers Inc., ISBN: 978-1-7281-0649-6, San Diego, 8- 12 Settembre 2019, doi: 10.1109/DASC43569.2019.9081725

Roberto Opromolla, Giuseppe Esposito, Giancarmine

Fasano (2019). In-flight estimation of magnetic biases on board of small UAVs exploiting cooperation. In: Proceedings of the 6th IEEE International Workshop on Metrology for AeroSpace. p. 1-6, Institute of Electrical and Electronics Engineers Inc., ISBN: 978-1-7281-1344-9, Torino, 19 - 21 Giugno 2019, doi: 10.1109/MetroAeroSpace.2019.8869614

Roberto Opromolla, Giuseppe Inchingolo, Giancarmine Fasano (2019). Airborne Visual Detection and Tracking of Cooperative UAVs Exploiting Deep Learning. SENSORS, vol. 19, p. 1-27, ISSN: 1424-8220, doi: 10.3390/s19194332

Roberto Opromolla, NOCERINO, ALESSIA (2019). Uncooperative spacecraft relative navigation with LIDAR-based Unscented Kalman Filter. IEEE ACCESS, vol. 7, p. 180012-180026, ISSN: 2169-3536, doi: 10.1109/ACCESS.2019.2959438

Claudio Pernechele, Cesare Dionisio, Matteo Munari, Roberto Opromolla, Giancarlo Rufino, Giancarmine Fasano, Michele Grassi, Serena Pastore (2018). Hyper hemispheric lens applications in small and micro satellites. ADVANCES IN SPACE RESEARCH, vol. 62, p. 3449-3461, ISSN: 0273-1177, doi: 10.1016/j.asr.2018.02.025

Giancarmine Fasano, Maria Daniela Graziano, Antonio Moccia, Roberto Opromolla, Alfredo Renga, Michele Grassi, Giancarlo Rufino, Mariano Iervolino, Salvatore Sarno (2018). Small Satellite Formation Flying for Distributed Synthetic Aperture Radar. In: Proceedings of the 69th International Astronautical Congress, IAC. p. 1-8, Parigi:International Astronautical Federation, IAF, 2018, 1-5 Ottobre

Opromolla, Roberto, Fasano, Giancarmine, Accardo, Domenico (2018). A vision-based approach to uav detection and tracking in cooperative applications. SENSORS, vol. 18, ISSN: 1424-8220, doi: 10.3390/s18103391

Opromolla, Roberto, Fasano, Giancarmine, Accardo, Domenico (2018). Perspectives and sensing concepts for small UAS sense and avoid. In: AIAA/IEEE Digital

Avionics Systems Conference - Proceedings. vol. 2018-, p. 1-10, Institute of Electrical and Electronics Engineers Inc., ISBN: 9781538641125, ILEC Conference Centre, Ibis London Earls Court, gbr, 2018, doi: 10.1109/DASC.2018.8569338

Opromolla, Roberto, Fasano, Giancarmine, Rufino, Giancarlo, Grassi, Michele (2018). Design of relative trajectories for in orbit proximity operations. ACTA ASTRONAUTICA, vol. 145, p. 342-356, ISSN: 0094-5765, doi: 10.1016/j.actaastro.2018.01.062

Opromolla, Roberto, Vetrella, Amedeo Rodi, Fasano, Giancarmine, Accardo, Domenico (2018). Airborne Visual Tracking for Cooperative UAV Swarms. In: AIAA Information Systems-AIAA Infotech@Aerospace, AIAA Scitech Forum. aiaa, ISBN: 978-1-62410-527-2, Kissimmee, FL, USA, 8-12 Gennaio 2018, doi: 10.2514/6.2018-0712

Roberto Opromolla, Francesco Russo, Giancarmine Fasano, Giancarlo Rufino, Michele Grassi (2018). Safe operations in proximity of space debris: relative motion design and pose estimation. In: Proceedings of the 69th International Astronautical Congress, IAC. p. 1-8, Parigi:International Astronautical Federation, IAF, BREMA (Germania), 1-5 OCT 2018

Roberto Opromolla, Giancarmine Fasano, Giancarlo Rufino, Michele Grassi (2018). Characterization and testing of a high-resolution Time-of-Flight camera for autonomous navigation. In: (a cura di): IEEE, Proceedings of 5th IEEE International Workshop on Metrology for Aerospace. p. 380-385, IEEE, ISBN: 978-153862474-6, Roma, 20-22 Giugno 2018, doi: 10.1109/MetroAeroSpace.2018.8453522

Roberto Opromolla, Giancarmine Fasano, Giancarlo Rufino, Michele Grassi, Claudio Pernechele, Cesare Dionisio (2018). Performance characterization of a non-conventional star tracker based on a hyper-hemispherical panoramic camera. In: Proceedings of the 69th International Astronautical Congress, IAC. p. 1-8, Parigi:International Astronautical Federation, IAF, Brema (Germania), 1-5 Ottobre 2018

Vincenzo Capuano, Roberto Opromolla, Giovanni Cuciniello, Vincenzo Pesce, Salvatore Sarno, Giuseppe Capuano, Michelle Lavagna, Michele Grassi, Federico Corraro, Paolo Tabacco, Marco Adinolfi, Francesco Meta, Maria Libera Battagliere, Alberto Tuozzi (2018). A Highly Integrated Navigation Unit for On-Orbit Servicing Missions. In: Proceedings of the 69th International Astronautical Congress, IAC. p. 1-13, Parigi:International Astronautical Federation, IAF, Brema (Germania), 1-5 Ottobre

OPROMOLLA, ROBERTO, Di Fraia, Marco Zaccaria, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE (2017). Laboratory Test of Pose Determination Algorithms for Uncooperative Spacecraft. In: Proc. 4th IEEE International Workshop on Metrology for Aerospace METROAEROSPACE 2017. p. 154-159, Piscataway, NJ:IEEE - Institute of Electrical and Electronics Engineers Inc., ISBN: 978-1-5090-4233-3, Padua (Italy), 21-23 June 2017, doi: 10.1109/MetroAeroSpace.2017.7999558

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, GRASSI, MICHELE, Savvaris, Al, MOCCIA, ANTONIO (2017). PCA-Based Line Detection from Range Data for Mapping and Localization-Aiding of UAVs. INTERNATIONAL JOURNAL OF AEROSPACE ENGINEERING (ONLINE), vol. 2017, p. 1-14, ISSN: 1687-5974, doi: 10.1155/2017/4241651

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE (2017). A review of cooperative and uncooperative spacecraft pose determination techniques for close-proximity operations. PROGRESS IN AEROSPACE SCIENCES, vol. 93, p. 53-72, ISSN: 0376-0421, doi: 10.1016/j.paerosci.2017.07.001

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE (2017). Hardware in the Loop Performance Assessment of LIDAR-Based Spacecraft Pose Determination. SENSORS, vol. 17, ISSN: 1424-8220, doi: 10.3390/s17102197

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE,

RUFINO, GIANCARLO, GRASSI, MICHELE (2017). Pose Estimation for Spacecraft Relative Navigation Using Model-based Algorithms. IEEE TRANSACTIONS ON AEROSPACE AND ELECTRONIC SYSTEMS, vol. 53, p. 431-447, ISSN: 0018-9251, doi: 10.1109/TAES.2017.2650785

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE, Pernechele, C., Dionisio, C. (2017). A new star tracker concept for satellite attitude determination based on a multi-purpose panoramic camera. ACTA ASTRONAUTICA, vol. 140, p. 166-175, ISSN: 0094-5765, doi: 10.1016/j.actaastro.2017.08.020

Opromolla Roberto, Sarno Salvatore, Fasano Giancarmine, Rufino Giancarlo, Grassi Michele (2017). TECHNOLOGIES AND ALGORITHMS FOR AUTONOMOUS POSE DETERMINATION FOR SMALL SATELLITES. In: AIDAA 2017 XXIV International Conference. AIDAA, Palermo-Enna, 18-22 September 2017

Pesce Vincenzo, Opromolla Roberto, Sarno Salvatore, Lavagna Michelle, Grassi Michele (2017). Vision-based pose estimation and relative navigation around uncooperative space objects. In: 10th International ESA Conference on Guidance, Navigation & Control Systems (ESA GNC 2017). ESA, Salzburg, Austria, May 29, 2017 - June 2, 2017

VETRELLA, AMEDEO RODI, OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, ACCARDO, DOMENICO, GRASSI, MICHELE (2017). Autonomous Flight in GPS-Challenging Environments Exploiting Multi-UAV Cooperation and Vision-aided Navigation. In: (a cura di): AIAAA - American Institute of Aeronautics and Astronautics, Proceedings of 2017 Scitech Forum - Information Systems - Infotech@Aerospace Conference. p. 1-14, aiaa, ISBN: 978-162410449-7, Gaylord Texan, Grapevine, Texas, USA, 9-13 gennaio 2017

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE, Savvaris, Al (2016). LIDAR-inertial integration for UAV localization

and mapping in complex environments. In: Proceedings of the International Conference on Unmanned Aircraft Systems 2016. p. 649-656, ISBN: 978-1-4673-9334-8, Washington DC, 7-10 June 2016, doi: 10.1109/ICUAS.2016.7502580

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE (2015). A Model-based 3D Template Matching Technique for Pose Acquisition of an Uncooperative Space Object. SENSORS, vol. 15, p. 3360-3382, ISSN: 1424-8220, doi: 10.3390/s150306360

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE (2015). ACTIVE VISION-BASED POSE ESTIMATION OF AN UNCOOPERATIVE TARGET. In: Advances in the Astronautical Sciences Series. vol. 153, p. 1393-1407, San Diego, CA:Univelt, Inc., ISBN: 978-087703617-3, Rome, Italy, March 24-26, 2014

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE (2015). Large space debris pose acquisition in close-proximity operations. In: 2nd IEEE International Workshop on Metrology for Aerospace, MetroAeroSpace 2015 - Proceedings. p. 491-496, Institute of Electrical and Electronics Engineers Inc., ISBN: 9781479975693, ita, 2015, doi: 10.1109/MetroAeroSpace.2015.7180706

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE (2015). Uncooperative pose estimation with a LIDAR-based system. ACTA ASTRONAUTICA, vol. 110, p. 287-297, ISSN: 0094-5765, doi: doi:10.1016/j.actaastro.2014.11.003

OPROMOLLA, ROBERTO, RUFINO, GIANCARLO, FASANO, GIANCARMINE, GRASSI, MICHELE (2015). Performance Evaluation of 3D Model-based Techniques for Autonomous Pose Initialization and Tracking. In: Proceedings of AIAA InfoTech@Aerospace 2015. p. 1-11, RESTON (VA):American Institute of Aeronautics and Astronautics, ISBN: 978-162410338-4, Kissimmee, FL (USA), 5-9 gennaio 2015, doi: 10.2514/6.2015-1426

OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE (2014). Spaceborne LIDAR-based pose determination of uncooperative targets. In: Proceedings of the IEEE International Workshop on Metrology in Aerospace 2014. p. 265-270, IEEE-Institute of Electrical and Electronics Engineers, Inc., ISBN: 9781479920709, Benevento, Italy, May 29-30, 2014, doi: 10.1109/MetroAeroSpace.2014.6865932

R. Opromolla, G. Rufino, G. Fasano, M. Grassi (2014). LIDAR-based Autonomous Pose Determination For a Large Space Debris. In: Proceedings of the 65th International Astronautical Congress. PARIGI:International Astronautical Federation, Toronto (Canada), 29 settembre-3ottobre

Premi e riconoscimenti

Premio/riconoscimento	2018 Outstanding Reviewer Award (2018)
Assegnato da	MDPI
Premio/riconoscimento	Programma STAR Linea 2 (Mobilità giovani ricercatori) (2015)
Assegnato da	Università di Napoli Federico II nell´ambito della Convezione pluriennale (2012-2014) con la Compagnia di San Paolo, Istituto Banco di Napoli-Fondazione
Premio/riconoscimento	Best paper presented by a young researcher (2015)
Assegnato da	Committee of the 2nd IEEE International Workshop on Metrology for Aerospace (MetroAeroSpace 2015)
Per	OPROMOLLA, ROBERTO, FASANO, GIANCARMINE, RUFINO, GIANCARLO, GRASSI, MICHELE (2015). Large space debris pose acquisition in close-proximity operations. In: 2nd IEEE International Workshop on Metrology for Aerospace, MetroAeroSpace 2015 - Proceedings. p. 491-496, Institute of Electrical and Electronics Engineers Inc., ISBN: 9781479975693, ita, 2015, doi: 10.1109/MetroAeroSpace.2015.7180706