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Summary

My research interests are in the wide area of Computer Vision and Robotics ranging from mobile robots to human-robot interaction. I have teaching experience from introductory computer and math courses to advanced courses such as Fundamentals of Programming (with Python at JAIST), Object-Oriented Programming with JAVA (both for non-CS and CS majors at FMV Işık University), Systems Programming (C and UNIX at FMV Işık University), Introduction to Programming (with C), Introductory Computer Sciences (with MATLAB, non-CS majors), Programming Languages I-II (with C), Image Processing, Computer Vision, Algorithms and Data Structures, Data Management and File Structures (Fundamentals of Database Systems), Computer-aided Mathematical Computations (with MATLAB), Image Compression and Standards (Graduate Course), and Introduction to Software Engineering¹.

Education

- Ph.D.: University of Girona, Institute of Informatics and Applications, Department of Computer Architecture and Technology, Computer Vision and Robotics, Spain, 2011
- MSc: Yildiz Technical University, Department of Mathematical Engineering, Türkiye, 2004
- BSc: Yildiz Technical University, Department of Mathematical Engineering, Türkiye, 2002 (including 1-Year English-only Preparatory Program offered by the university)

Positions

- Senior Researcher, October 2023 – present, IAS-8: Data Analytics and Machine Learning, Institute for Advanced Simulation, Forschungszentrum Jülich, Jülich, Germany
- Assistant Professor, October 2018 – October 2023, Japan Advanced Institute of Science and Technology, School of Information Science, Ishikawa, Japan
- Adjunct (Teaching) Assistant Professor, 2017-2018, FMV Işık University, Istanbul-Turkey (Joint appointment)
- Assistant Professor, May 2016 - October 2018, Yildiz Technical University, Department of Mathematical Engineering, Istanbul, Turkey
- Postdoctoral Researcher, February 2015 – January 2016, Yonsei University, School of Integrated Technology, Song-do, Rep. of Korea
- Postdoctoral Researcher, September 2012 – August 2013, Korea Advanced Institute of Science and Technology, Ocean Robotics and Intelligence Lab., Daejeon, Rep. of Korea
- DAAD Supported Visiting Researcher, July 2012 – September 2012, Martin Luther University of Halle, Institute of Computer Science, Halle, Germany
- Research Assistant, February 2005 – December 2009, University of Girona, Department of Computer Architecture and Technology, Girona, Spain
- Research & Teaching Assistant, October 2002 – May 2016, Yildiz Technical University, Department of Mathematical Engineering, Istanbul, Turkey

Publications

Book-Monograph

- **A.Elibal**, N. Gracias, and R. Garcia, Efficient Topology Estimation for Large Scale Optical Mapping, Springer Tracts in Advanced Robotics, Vol. 82 (2013), Springer

¹ Courses given at Yildiz Technical University unless the university name is explicitly stated.
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Book-Chapters

- R. Garcia, N. Gracias, T. Nicosevici, R. Prados, N. Hurtos, R. Campos, J. Escartin, **A. Elibol**, R. Hegedus, and L. Neumann, Exploring the Seafloor with Underwater Robots, In Computer Vision for Vehicle Technology: Land, Sea, Air & Space edited by A.M. Lopez and A. Imiya and T. Padjla and J.M. Alvarez, March 2017, pp 75-99, 978-1-118-86807-2, Wiley.
- N. Gracias, R. Garcia, R. Campos, N. Hurtos, R. Prados, A.S.M. Shihavuddin, T. Nicosevici, **A. Elibol**, L. Neumann, and J. Escartin, Application Challenges of Underwater Vision, In Computer Vision for Vehicle Technology: Land, Sea, Air & Space edited by A.M. Lopez and A. Imiya and T. Padjla and J.M. Alvarez, March 2017, pp 133-159, 978-1-118-86807-2, Wiley.

Articles

» SCI/SCIE Journal Papers

1. Z. Gao, **A. Elibol**, and N.Y. Chong, On the Generality and Application of Mason's Voting Theorem to Center of Mass Estimation for Pure Translational Motion, IEEE Transactions on Robotics, DOI: 10.1109/TRO.2024.3392080
2. Z. Gao, **A. Elibol**, and N.Y. Chong, Zero Moment Two Edge Pushing of Novel Objects with Center of Mass Estimation, IEEE Transactions on Automation Science and Engineering, vol. 20, no. 3, pp. 1487-1499, July 2023, <https://doi.org/10.1109/TASE.2022.3208739>
3. Z. Gao, **A. Elibol**, and N.Y. Chong, A Few-Shot Learning Framework for Planar Pushing of Unknown Objects, Intelligent Service Robotics, <https://doi.org/10.1007/s11370-022-00425-7> (*Intelligent Service Robotics Journal 2023 Best Paper Award*)
4. T.H. Huang, **A. Elibol**, and N.Y. Chong, Enabling Landings on Irregular Surfaces for Unmanned Aerial Vehicles via a Novel Robotic Landing Gear, Intelligent Service Robotics, <https://doi.org/10.1007/s11370-022-00420-y>
5. Z. Shen, **A. Elibol**, and N.Y. Chong, Multi-modal Feature Fusion for Better Understanding of Human Personality Traits in Social Human-Robot Interaction, Robotics and Autonomous Systems, Volume 146, <https://doi.org/10.1016/j.robot.2021.103874>, 2021
6. T. T. V. Nguyen, **A. Elibol**, and N.Y. Chong, Learning Bodily Expression of Emotion for Social Robots through Human Interaction, IEEE Transactions on Cognitive and Developmental Systems, vol. 13, no. 1, pp. 16-30, March 2021, <https://doi.org/10.1109/TCDS.2020.3005907>
7. Z. Shen, **A. Elibol**, and N.Y. Chong, Understanding Nonverbal Communication Cues of Human Personality Traits in Human-Robot Interaction, IEEE/CAA Journal of Automatica Sinica, vol. 7, no. 6, pp. 1465-1477, Nov. 2020, <https://doi.org/10.1109/JAS.2020.1003201>.
8. **A. Elibol** and N.Y. Chong, Efficient Image Registration for Underwater Optical Mapping using Geometric Invariants, Journal of Marine Science and Engineering, 2019; 7(6):178, <https://doi.org/10.3390/jmse7060178>
9. **A. Elibol**, J. Kim, N. Gracias, and R. Garcia, Fast Underwater Image Mosaicing through Submapping, Journal of Intelligent & Robotic Systems, January 2017, Volume 85, Issue 1, pp 167-187, <https://doi.org/10.1007/s10846-016-0380-x>
10. **A. Elibol**, H. Shim, S. Hong, J. Kim, N. Gracias, and R. Garcia, Online underwater optical mapping for trajectories with gaps, Intelligent Service Robotics, July 2016, Volume 9, Issue 3, pp 217-229, <https://doi.org/10.1007/s11370-016-0195-4>
11. **A. Elibol**, J. Kim, N. Gracias and R. Garcia, Efficient image mosaicing for multi-robot visual underwater mapping. Pattern Recognition Letters, 46, 20-26 (2014), <https://doi.org/10.1016/j.patrec.2014.04.020>
12. **A. Elibol**, N. Gracias, R. Garcia, and J. Kim, Graph theory approach for match reduction in image mosaicing. Journal of the Optical Society of America A-Optics Image Science and Vision, 31(4), 773-782 (2014), <https://doi.org/10.1364/JOSAA.31.000773>

13. A. Sayli and **A. Elibol**, Rule Evaluation Algorithm for Semantic Query Optimisation, Applied Mathematics & Information Sciences (AMIS), Vol. 7, No. 5, pp:1773-1781 (2013)
14. **A. Elibol**, N. Gracias and R. Garcia, Fast Topology Estimation for Image Mosaicing using Adaptive Information Thresholding, Robotics and Autonomous Systems, Issue 2, Vol. 61, pp. 125-136, (2013), <https://doi.org/10.1016/j.robot.2012.10.010>
15. **A. Elibol**, R. Garcia and N. Gracias, A New Global Alignment Approach for Underwater Optical Mapping, Ocean Engineering, Issue 10, Vol. 38, pp. 1207-1219, (2011), <https://doi.org/10.1016/j.oceaneng.2011.05.013>
16. **A. Elibol**, N. Gracias and R. Garcia, Augmented State-Extended Kalman Filter Combined Framework for Topology Estimation in Large Area Underwater Mapping, Journal of Field Robotics, Issue 5, Vol. 27, pp. 656-674, (2010), <https://doi.org/10.1002/rob.20357>
17. J. Escartin, R. Garcia, O. Delaunoy, J. Ferrer, N. Gracias, **A. Elibol**, X. Cufi, L. Neumann, D.J. Fornari, S.E. Humphris, and J. Renard, Globally aligned photomosaic of the Lucky Strike hydrothermal vent field (Mid-Atlantic Ridge, 37°18.5'N): Release of georeferenced data, mosaic construction, and viewing software, Geochemistry, Geophysics and Geosystems, Issue 12, Vol. 9, pp. 1-17, (2008), <https://doi.org/10.1029/2008GC002204>

» Journal Papers

1. Y. Song, **A. Elibol** and N.Y. Chong, Abdominal multi-organ segmentation using multi-scale and context-aware neural networks, IFAC Journal of Systems and Control, Vol. 27, March 2024, <https://doi.org/10.1016/j.ifacsc.2024.100249>
2. **A. Elibol**, N.Y. Chong, H. Shim, J. Kim, N. Gracias and R. Garcia, Mismatched image identification using histogram of loop closure error for feature-based optical mapping, International Journal of Intelligent Robotics and Applications, <https://doi.org/10.1007/s41315-019-00089-0>
3. T. Sayim and **A. Elibol**, Developing an End-to-End Secure Emailing Add-in using Steganography, European Journal of Science and Technology, (14), 209-214, 2018, <https://doi.org/10.31590/ejosat.453530>
4. F. Aylikci, N. Yahnioglu, **A. Elibol**, FEM Analysis of the Influence of the Plate Geometry on the Buckling Delamination of a Piezoelectric Sandwich Rectangular Thick Plate, Sigma Journal of Engineering and Natural Sciences, no.2, pp.193-202, 2018.
5. U.B. Asaner and **A. Elibol**, Low-cost IoT design and implementation of a remote food and water control system for pet owners, Hittite Journal of Science & Engineering, Vol.5, No. 4, 317-320, 2018.
6. **A. Elibol**, A Two-Step Global Alignment Method for Feature-Based Image Mosaicing, Mathematical and Computational Applications, 2016, 21(3), 30; <https://doi.org/10.3390/mca21030030>
7. A. Sayli and **A. Elibol**, Using Rule Mining Modules Combined with Automatic Rule Derivation on Semantic Query Optimization, International Journal of Technology, Policy and Management (IJTPM), Issue 4, Vol. 5, 348-360, (2005)
8. Garcia, R., Cufi X., Prados R., **Elibol A.**, Ferrer J., Villanueva M., and Nicosevici T., Georeferenced Photo-Mosaicing of the Seafloor, Instrumentation Viewpoint Journal, Vol. 4, (2005)

Papers (3) and (5) are a part of the undergraduate student research activities.

Proceeding Papers

» International Conference

1. T.N. Canh, **A. Elibol**, N.Y. Chong, and V.X. Hoang, Object-Oriented Semantic Mapping for Reliable UAVs Navigation, 12th International Conference on Control, Automation and Information Sciences (ICCAIS 2023), 27-29 November, Hanoi-Vietnam.

2. T.N. Canh, V.T. Nguyen, V.X. Hoang, **A. Elibol**, and N.Y. Chong, S3M: Semantic Segmentation Sparse Mapping for UAVs with RGB-D Camera, 16th IEEE/SICE International Symposium on System Integration, 8-11th January, 2024, Ha Long-Vietnam.
3. C. Yue, **A. Elibol**, and N.Y. Chong, Persona-based Dialogue Generation with Sentence Embedding for Prolonged Human-Robot Communication, 23rd International Conference on Control, Automation and Systems (ICCAS 2023), October 17-20, Yeosu-Korea
4. J. Kurosawa, **A. Elibol**, and N.Y. Chong, RDIU-Net: Lightweight Medical Image Segmentation Network, 23rd International Conference on Control, Automation and Systems (ICCAS 2023), October 17-20, Yeosu-Korea
5. Z. Gao, **A. Elibol**, and N.Y. Chong, Estimating the Center of Mass of an Object with Non-uniform Density via High-speed Pushing, IEEE 19th International Conference on Automation Science and Engineering (CASE) (IEEE CASE 2023), August 26-30, Auckland-New Zealand
6. Y. Song, **A. Elibol**, and N.Y. Chong, Two-Path Augmented Directional Context Aware Ultrasound Image Segmentation, IEEE International Conference on Mechatronics and Automation (ICMA 2023), August 6-9, 2023, Harbin, China.
7. **A. Elibol** and N.Y. Chong, Target Orientation Inclusive Push Planning for Robotic Manipulations, 18th International Conference on Intelligent Autonomous Systems (IAS 2023), July 4 – 7, 2023, Suwon, Korea (LBR)
8. Q. Li, Z. Gao, **A. Elibol**, and N.Y. Chong, Target Acquisition by Reinforcement Learning based Bin Tilting with a Robotic Arm, 18th International Conference on Intelligent Autonomous Systems (IAS 2023), July 4 – 7, 2023, Suwon, Korea.
9. **A. Elibol** and N.Y. Chong, Developing a Novel Formulation for Team-Forming Problem of Coverage Problems with a Group of Heterogeneous Mobile Robots: Preliminary Results, 20th International Conference on Ubiquitous Robots (UR2023), June 25-28, 2023, Hawaii, USA
10. Y. Song, **A. Elibol**, and N.Y. Chong, Abdominal Multi-Organ Segmentation Based on Feature Pyramid Network and Spatial Recurrent Neural Network, The 22nd World Congress of the International Federation of Automatic Control, 9-14 July, Yokohama, Japan
11. **A. Elibol** and N.Y. Chong, Toward Computationally Efficient Path Generation and Push Planning for Robotic Nonprehensile Manipulation, 9th International Conference on Automation, Robotics, and Applications (ICARA 2023), Feb.10-12, Abu Dhabi-UAE
12. K. Liao, **A. Elibol**, W. Xiao, C. Liao, W. Wang, and N.Y. Chong, Machine Learning Algorithm to Predict Cardiac Output Using Arterial Pressure Waveform Analysis, 2022 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), 2022, pp. 1586-1591, DOI: 10.1109/BIBM55620.2022.9995429.
13. Z. Ding, **A. Elibol**, and N.Y. Chong, Leveraging Extended Chat History through Sentence Embedding in Multi-turn Dialogue toward Increasing User Engagement, The 22nd International Conference on Control, Automation and Systems (ICCAS 2022), Nov. 27 - Dec. 01, Busan, Rep. of Korea.
14. K. Miyaoura, **A. Elibol**, and N.Y. Chong, Performance Enhancement Step for Motion Estimation via Feature-based Image Matching, The 22nd International Conference on Control, Automation and Systems (ICCAS 2022), Nov. 27 - Dec. 01, Busan, Rep. of Korea.
15. Z. Gao, **A. Elibol**, and N.Y. Chong, Estimating the Center of Mass of an Unknown Object for Nonprehensile Manipulation, IEEE International Conference on Mechatronics and Automation (IEEE ICMA 2022), August 7-10, Guilin-China
16. Z. Gao, **A. Elibol**, and N.Y. Chong, Estimating the Center of Mass of an Unknown Object via Dynamic Pushing, IEEE 18th International Conference on Automation Science and Engineering (CASE), 2022 (PIP).
17. T.H. Chung, **A. Elibol**, and N.Y. Chong, An Unmanned Aerial-Surface Vehicle Hybrid Outfitted with a Transformable Housing, IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM 2022), July 11-15, Sapporo-Japan.

18. J. Lee, **A. Elibol**, and N.Y. Chong, A Novel Filter Pruning Algorithm for Vision Tasks based on Kernel Grouping, 19th International Conference on Ubiquitous Robots (UR2022), July 4-6, 2022, Rep. of Korea
19. F. Setiono, **A. Elibol**, and N.Y. Chong, A Novel Room Categorization Approach to Semantic Localization for Domestic Service Robots, 21st International Conference on Control, Automation and Systems (ICCAS 2021), October 12-15, 2021, pp. 1166-1171, DOI: 10.23919/ICCAS52745.2021.9650023.
20. J. Lee, **A. Elibol**, and N.Y. Chong, Model Diet: A Simple yet Effective Model Compression for Vision Tasks, 21st International Conference on Control, Automation and Systems (ICCAS 2021), October 12-15, 2021, pp. 506-511, DOI: 10.23919/ICCAS52745.2021.9649988
21. C. Jin, **A. Elibol**, P. Zhu, and N.Y. Chong, Semantic Mapping Based on Image Feature Fusion in Indoor Environments, 21st International Conference on Control, Automation and Systems (ICCAS 2021), October 12-15, 2021, pp. 693-698, DOI: 10.23919/ICCAS52745.2021.9650062
22. Z. Gao, **A. Elibol**, and N.Y. Chong, Planar Pushing of Unknown Objects using a Large-Scale Simulation Dataset and Few-Shot Learning, 17th IEEE International Conference on Automation Science and Engineering (CASE), August 23-27, 2021, pp. 341-347, DOI: 10.1109/CASE49439.2021.9551513.
23. K. Liao, W. Wang, **A. Elibol**, L. Meng, X. Zhao, N.Y. Chong, Does Deep Learning REALLY Outperform Non-deep Machine Learning for Clinical Prediction on Physiological Time Series?, 17th IEEE International Conference on Automation Science and Engineering (CASE), August, 23-27, 2021. (PIP)
24. T.H. Chung, **A. Elibol**, and N.Y. Chong, A UAV-UUV Transformative Housing for Minimal Logistics Underwater Exploration, 18th International Conference on Ubiquitous Robots (UR), July 12-14, 2021, Virtual Conference, 2021. (WIP)
25. T.H. Huang, **A. Elibol**, and N.Y. Chong, Enabling Landings on Irregular Surfaces for Unmanned Aerial Vehicles via a Novel Robotic Landing Gear, 18th International Conference on Ubiquitous Robots (UR), July 12-14, 2021, Virtual Conference, 2021 (**Best Paper Finalist**)
26. **A. Elibol** and N.Y. Chong, Algorithmically Improved Framework for Image-only Robotic Mapping, 18th International Conference on Ubiquitous Robots (UR), July 12-14, 2021, pp. 515-520, DOI: 10.1109/UR52253.2021.9494684.
27. T. T. V. Nguyen, **A. Elibol**, and N.Y. Chong, A GAN-based Approach to Communicative Gesture Generation for Social Robots, 17th IEEE International Conference on Advanced Robotics and Its Social Impacts (ARSO 2021), July 8-10, Virtual Conference, 2021, pp. 58-64, DOI: 10.1109/ARSO51874.2021.9542828. (**Best Paper Finalist**)
28. F. Setiono, **A. Elibol**, and N.Y. Chong, Human Emotional State Estimation Evaluation using Heart Rate Variability and Activity Data, 4th IEEE International Conference on Robotic Computing (IRC 2020), Nov. 9-11, Virtual Conference, 2020, (WIP)
29. Z. Gao, **A. Elibol**, and N.Y. Chong, Non-Prehensile Manipulation Learning through Self-Supervision, 4th IEEE International Conference on Robotic Computing (IRC 2020), Nov. 9-11, 2020, pp. 93-99, DOI: 10.1109/IRC.2020.00022.
30. N. Pinkam, **A. Elibol**, and N.Y. Chong, Informative Mobile Robot Exploration for Radiation Source Localization with a Particle Filter, 4th IEEE International Conference on Robotic Computing (IRC 2020), Nov. 9-11, 2020, pp. 107-112, DOI: 10.1109/IRC.2020.00024.
31. Z. Gao, **A. Elibol**, and N.Y. Chong, A 2-Stage Framework for Learning to Push Unknown Objects, 10th Joint IEEE International Conference on Development and Learning and Epigenetic Robotics (ICDL-EpiRob), Oct. 28-30, 2020, pp. 1-7, DOI: 10.1109/ICDL-EpiRob48136.2020.9278075.
32. T. T. V. Nguyen, **A. Elibol**, and N.Y. Chong, Conditional Generative Adversarial Network for Generating Communicative Robot Gesture, 29th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN 2020), 31 Aug-04 Sept. 2020, pp. 201-207, DOI: 10.1109/RO-MAN47096.2020.9223498.

33. T. T. V. Nguyen, **A. Elibol**, and N.Y. Chong, Learning from Humans to Generate Communicative Gestures for Social Robots, 17th International Conference on Ubiquitous Robots (UR), 22-26 June 2020, pp. 284-289, DOI: 10.1109/UR49135.2020.9144985.
34. M. Yi, W. Li, **A. Elibol**, and N.Y. Chong, Attention-model Guided Image Enhancement for Robotic Vision Applications, 17th International Conference on Ubiquitous Robots (UR), 22-26 June 2020, pp. 514-519, DOI: 10.1109/UR49135.2020.9144966. (**Best Paper and Best Application Paper Categories Finalist**)
35. Z. Shen, **A. Elibol**, and N.Y. Chong, Multimodal Feature Fusion for Human Personality Traits Classification, 17th International Conference on Ubiquitous Robots (UR), June 22-26, 2020, 22-26 June, Virtual Conference, 2020. (LBR)
36. Z. Gao, **A. Elibol**, and N.Y. Chong, A Hybrid 2-Stage Method for Robotic Planar Pushing, 17th International Conference on Ubiquitous Robots (UR), June 22-26, 2020, 22-26 June, Virtual Conference, 2020. (LBR)
37. T.H. Huang, **A. Elibol**, and N.Y. Chong, A Design for UAV Irregular Surface Landing Capability, 17th International Conference on Ubiquitous Robots (UR), June 22-26, 2020, 22-26 June, Virtual Conference, 2020. (WIP)
38. **A. Elibol** and N.Y. Chong, Developing a Video Synchronization Framework for Wind Turbine Inspection Videos, in the proceeding of the 8th IIAE International Conference on Industrial Application Engineering (ICIAE), pp. 71-76. DOI:10.12792/iciae2020.016
39. Z. Shen, **A. Elibol**, and N.Y. Chong, Nonverbal Behavior Cue for Recognizing Human Personality Traits in Human-Robot Social Interaction, IEEE International Conference on Advanced Robotics and Mechatronics (ICARM), Osaka, Japan, 2019 (**Best Paper Award in Advanced Robotics**)
40. **A. Elibol** and N.Y. Chong, Topology Graph Pruning for Optical Mapping Methods using Edge Betweenness, IEEE International Conference on Advanced Robotics and Mechatronics (ICARM), Osaka, Japan, 2019
41. **A. Elibol** and N.Y. Chong, On the Optimal Ordering of Overlapping Image Pairs for Image Mosaicing, 14th Asia Pacific International Conference on Information Science and Technology, Beijing, China, 2019 (Short Paper)
42. Z. Shen, **A. Elibol**, and N.Y. Chong, Inferring Human Personality Traits in Human-Robot Social Interaction, 019 14th ACM/IEEE International Conference on Human-Robot Interaction (HRI), Daegu, S. Korea, 2019, pp. 578-579. DOI: 10.1109/HRI.2019.8673124, (LBR)
43. F. Aylikci, N.Yahnioglu, and **A. Elibol**, The Effect of Boundary Conditions on the Critical Parameters in the Buckling Delamination of PZT/Metal/PZT Sandwich Rectangular Thick Plate, 7th International Eurasian Conference On Mathematical Sciences And Applications (IECMSA-2018), Kyiv, Ukraine, 28-31 Ağustos 2018, vol.1, pp.1-1, (AO)
44. N. Gracias, R. Garcia, R. Campos, R. Prados, J. Bosch, **A. Elibol**, T. Nicosevici, L. Neumann and J. Quintana, Omnidirectional Underwater Surveying and Telepresence, Proceedings of the 7th International Workshop on Marine Technology (MARTECH), Instrumentation Viewpoint 19 Barcelona, Spain, November 2016
45. **A. Elibol** and H. Shim, Developing a Visual Stopping Criterion for Image Mosaicing Using Invariant Color Histograms, Advances in Multimedia Information Processing–PCM 2015, 350-359
46. **A. Elibol**, J. Kim, N. Gracias, and R. Garcia, Towards automatic identification of mismatched image pairs through loop constraints, IS&T/SPIE Electronic Imaging Conference, San Francisco, (2014)
47. S-C. Yu, J. Pyo, H-G. Joe, J. Kim and **A. Elibol**, Development of Hovering Type AUV 'Cyclops' for Precision Observation, MTS/IEEE OCEANS 2013, San Diego
48. **A. Elibol**, J. Kim, S-C. Yu, N. Gracias and R. Garcia, Match Elimination using Cycle Basis in Underwater Optical Mapping, MTS/IEEE OCEANS 2013, Norway
49. **A. Elibol**, S. Posch, A. Maurer, K. Pillen, and B. Möller, Vision-based 3D-Reconstruction of Barley Plants, IbPRIA 2013 - 6th Iberian Conference on Pattern Recognition and Image Analysis, Issue 7887, Vol. 0, pp. 406-415, (2013)

50. **A. Elibol**, N. Gracias, and R. Garcia, Reducing the Optimisation Effort in Batch Mosaicing, International Conference of Numerical Analysis and Applied Mathematics, Issue 0, pp. 878-881, (2012)
51. **A. Elibol**, N. Gracias, and R. Garcia, A. Gleason, B. Gintert, D. Lirman, and R.P. Reid, Efficient autonomous image mosaicing with applications to coral reef monitoring, IROS 2011 Workshop on Robotics for Environmental Monitoring, (2011)
52. **A. Elibol**, N. Gracias, and R. Garcia, Match Selection in Batch Mosaicing using Mutual Information, IbPRIA 2009 - 4th Iberian Conference on Pattern Recognition and Image Analysis, Vol. 0, pp. 104-111, (2009)
53. **A. Elibol**, R. Garcia, O. Delaunoy, and N. Gracias, A New Global Alignment Method for Feature Based Image Mosaicing, 4th International Symposium on Visual Computing (ISVC08), Vol. 0, pp. 275-266, (2008)
54. **A. Elibol**, B. Moller, and R. Garcia, Perspectives of Auto-Correcting Lens Distortions in Mosaic-Based Underwater Navigation, Proc. of 23rd Int. Symposium on Computer and Information Sciences (ISCIS '08), (2008)
55. J. Ferrer, **A. Elibol**, O. Delaunoy, N. Gracias, and R. Garcia, Large-Area Photo-Mosaics Using Global Alignment and Navigation Data, MTS/IEEE OCEANS, (2007)
56. O. Delaunoy, **A. Elibol**, R. Garcia, J. Escartin, D.J. Fornari, and S. Humphris, Generation of High Resolution Geo-Referenced Photo-Mosaics from Navigation Data, AGU Fall Meeting, (2006)
57. A. Sayli and **A. Elibol**, A Rule Rectification Algorithm on Semantic Query Optimisation, 17th International Conference on Systems Research, Informatics and Cybernetics Focus on Advances in Decision Technology and Intelligent Information Systems, (2005)
58. I. Emiroglu, **A. Elibol**, C. Ertekin, and Y. Koyuncu, Comparison of Lossless Image Compression Methods by Using Lossy Image Compression Method, UkrObraz 2004 The Seventh All-Ukrainian International Conference on Signal/Image Processing and Pattern Recognition, (2004)
59. A. Sayli and **A. Elibol**, Rule Mining Modules on Semantic Query Optimisation, 16th International Conference on Systems Research, Informatics and Cybernetics, Focus on Advances in Decision Technology and Intelligent Information Systems, Vol. 0, pp. 38-42, (2004)
60. I. Emiroglu, M. Bal, and **A. Elibol**, Comparison of Lossy Image Compression Methods, ICSP 2003 IJCI Proceedings of International Conference on Signal Processing, Issue 2, Vol. 1, pp. 177-181, (2003)

» **National Conference (published in Turkish)**

1. Aylikci F., Yahnioğlu N., **Elibol, A.**, "Sandviç dikdörtgen kalın plağın delaminasyon burkulmasının FEM ile incelenmesi", TUMTMK 20. Ulusal Mekanik Kongresi, Bursa, Türkiye, 5-9 Eylül 2017, cilt.1, no.1, ss.39-48,
2. **Elibol, A.**, Gracias N. and Garcia R., Görsel Sualtı Haritalama İçin Etkin Resim Mozaikleme, 20. IEEE Sinyal İşleme ve İletişim Uygulamaları (SİU) Kurultayı, (2012)
3. Sayli A. and **Elibol, A.**, Veri Tabanlı Sorgulardan Yapılan Otomatik Öğrenmelerde Öğrenilen Bilgilerin Lojistik Modüllerle Optimizasyonu, Pamukkale Üniversitesi Bilgi Teknolojileri Kongresi III, (2004)
4. Emiroglu I., Guler C., **Elibol, A.**, and Olgun H.E., Ders Takibinde İnternet Modeli, Pamukkale Üniversitesi Bilgi Teknolojileri Kongresi II, (2003)

Project Involvements

Project Title	Role	Funding Agency	Dates
LANDrone: Developing robotic tools for adding non-planar surface landing capability to UAVs	Principal Investigator	The United States Air Force Office of Scientific Research Asian Office of Aerospace Research and Development (AOARD)	2020-09-21 2023-09-20
A Modular System for Detailed Visual Inspection of Wind Turbines using an Unmanned Aerial Vehicle	Principal Investigator	JAIST Support Foundation, JAIST Research Grant	2019-07-01 2020-07-01

Secure Emailing System using Steganographic Methods	Advisor	Undergraduate Students Research Activities Support Program by the Scientific and Technological Research Council of Turkiye (TUBITAK)	2018-07-01 2018-02-01
OMNIUS – Lightweight Robot for Omni-directional Underwater Surveying and Telepresence	External Collaborator	Spanish Ministry of Science and Innovation	2014-01-01 2016-12-31
MuMAP Multi-modal 3-D Mapping for the Characterization of the Seafloor using an Autonomous Robot	External Collaborator	Spanish Ministry of Science and Innovation	2011-01-01 2013-12-31
AIRSUB - Aplicaciones Industriales de los Robots SUBmarinos	Researcher	Spanish Ministry of Science and Innovation	2006-01-01 2008-12-31

Honors and Awards

- Intelligent Service Robotics Journal 2023 Best Paper Award
- Best Paper Award in Advanced Robotics, IEEE International Conference on Advanced Robotics and Mechatronics (ICARM), Osaka, Japan, 2019
- Visiting Researcher Scholarship from DAAD (German Academic Exchange Service)
- Ph.D. Scholarship from Autonomous Catalan Government (Generalitat de Catalunya, www.gencat.cat)
- Ph.D. Scholarship from the Scientific and Technical Research Council of Turkey (TUBITAK) (withdrawn)
- MSc Scholarship from TUBITAK

Organizational/Scientific Involvements

- **Associate Editor**, Intelligent Service Robotics Journal, Springer, December 2018-present
- Session Chair, 2023 The 18th International Conference on Intelligent Autonomous System 2023 (IAS18 – 2023), July 4-7, 2023, Suwon- Rep. of Korea
- Session Chair, 2022 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM), July 11-15, 2022
- Associate Editor, 19th International Conference on Ubiquitous Robots (UR 2022), Jeju – Rep. of Korea, July 4-6, 2022
- Session Chair, 21st International Conference on Control, Automation, and Systems (ICCAS), Jeju – Rep. of Korea, Hybrid due to Corona outbreak, October 12-15, 2021.
- Session Chair, 17th International Ubiquitous Robots (UR 2020), ~~Kyoto-Japan~~, Virtual due to Corona outbreak, June 22-26, 2020
- Publicity Co-Chair of 17th International Ubiquitous Robots (UR 2020), ~~Kyoto-Japan~~, Virtual due to Corona outbreak, June 22-26, 2020
- Session Chair, 14th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2019), Beijing, China, June 2019
- Co-Chair of Robotics/Mechatronics Track of 6th International Conference on Modelling, Simulation, and Applied Optimization (ICMSAO'15) Istanbul-Turkey.
- Member of the organizing committee for the International Conference on Recent Advances in Pure & Applied Mathematics (ICRAPAM 2014, 2015, and 2016)
- Member of a program committee for the International Workshop on Computer Vision in Vehicle Technology: From Earth to Mars (CVVT2011, CVVT2012, and CVVT2013).
- Member of a local committee International Conference on Applied Analysis and Algebra (ICAAA2011 and ICAAA 2012).

- Member of a program committee 15th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA2010) Track 7 Intelligent Robots and Systems.

Presentations

- “Math and its power in Academic Career”, Within Career Week Activities, Kirklaereli University, Remote Invited Seminar, March 2024 (**Invited Seminar**, presented in Turkish)
- Target Orientation Inclusive Push Planning for Robotic Manipulations, 18th International Conference on Intelligent Autonomous Systems (IAS 2023), July 4 – 7, 2023, Suwon, South Korea (*poster presentation*)
- Developing a Novel Formulation for Team-Forming Problem of Coverage Problems with a Group of Heterogeneous Mobile Robots: Preliminary Results, 20th International Conference on Ubiquitous Robots (UR2023), June 25-28, 2023, Hawaii, USA
- “Academic Career Path for Students with Math. Background”, Within Career Week Activities, Kirklaereli University, Remote Invited Seminar, May 2023 (**Invited Seminar**, presented in Turkish)
- “Toward Computationally Efficient Path Generation and Push Planning for Robotic Nonprehensile Manipulation”, 9th International Conference on Automation, Robotics and Applications (ICARA 2023), Feb.10-12, Abu Dhabi-UAE
- “Mathematical Methods in Creating Large-scale Optical Maps”, Korea Institute of Robotics & Technology Convergence, December 2022, Pohang-Rep. of Korea (**Invited Seminar**)
- Performance Enhancement Step for Motion Estimation via Feature-based Image Matching, The 22nd International Conference on Control, Automation and Systems (ICCAS 2022), Nov. 27 - Dec. 01, Busan, Rep. of Korea (*poster presentation*)
- “Estimating the Center of Mass of an Unknown Object for Nonprehensile Manipulation”, IEEE International Conference on Mechatronics and Automation (IEEE ICMA 2022), August 7-10, Remote
- “Algorithmically Improved Framework for Image-only Robotic Mapping”, 18th International Conference on Ubiquitous Robots (UR), Hybrid Conference, July 2021 (*poster presentation*)
- “Academic Career in Abroad for Mathematical Engineering Students”, Within the Introduction to Mathematical Engineering Course, Fall 2020, Yildiz Technical University, Remote Invited Lecture, December 2020 (**Guest/Invited Lecture**, presented in Turkish)
- “Underwater Robotics and Mapping”, IEEE Istanbul Sabahattin Zaim University Student Section Expert Talks Activity, Remote Seminar, December 2020 (**Invited Webinar**, presented in Turkish)
- “Attention-model Guided Image Enhancement for Robotic Vision Applications”, 17th International Conference on Ubiquitous Robots (UR), Virtual Conference, June 2020
- “Topology Graph Pruning for Optical Mapping Methods using Edge Betweenness”, IEEE International Conference on Advanced Robotics and Mechatronics (ICARM), July 2019, Osaka-Japan
- “Optical Sea-Floor Mapping using Underwater Robots”, 14th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2019), June 2019, Beijing-China (**Keynote Speaker**)
- “Developing a Visual Stopping Criterion for Image Mosaicing using Invariant Color Histograms”, Ocean Robotics and Intelligence Lab. at KAIST, May 2015, Daejeon-Rep. of Korea (**Invited Seminar**)
- “Towards automatic identification of mismatched image pairs through loop constraints”, IS&T/SPIE Electronic Imaging Conference, February 2014, San Francisco-USA
- “Optical Underwater Mapping”, Korea Institute of Ocean Science and Technology, November 2013, Daejeon, Rep. of Korea (**Invited Seminar**)
- “Underwater Image Mosaicing”, 4th International Interdisciplinary Field Training of Marine Robotics and Applications "Breaking the Surface 2012", October 2012, Croatia (**Invited Tutorial Session**)
- “Optical Underwater Mapping”, Red Sea Research Center at King Abdullah University of Science and Technology, May 2012, Saudi Arabia (**Invited Seminar**)

- “Efficient Image Mosaicing for Optical Underwater Mapping “, IEEE 20th Conference on Signal Processing and Communications Applications (SIU), April 2012, Fethiye-Turkey (*National Conference, presented in Turkish*)
- “Efficient Autonomous Image Mosaicing with Applications to Coral Reef Monitoring”, Workshop on Robotics for Environmental Monitoring IROS 2011, 25-30 September 2011, San Francisco-USA
- “Match Selection in Batch Mosaicing using Mutual Information”, IbPRIA 2009 - 4th Iberian Conference on Pattern Recognition and Image Analysis, June 2009, Povia de Varzim-Portugal (*poster presentation*)
- “A New Global Alignment Method for Feature-Based Image Mosaicing”, 4th International Symposium on Visual Computing (ISVC08), 1-3 December 2008, Las Vegas-USA
- “Perspectives of Auto-Correcting Lens Distortions in Mosaic-Based Underwater Navigation”, 23rd Int. Symposium on Computer and Information Sciences (ISCIS'08), October 2008, Istanbul-Turkey
- “Preliminary Results on Motion Estimation of an Underwater Vehicle through Optical Imaging” at the University of Girona (2006)
- “Thinning Algorithms in Digital Image Processing” at Yildiz Technical University (Presented in Turkish)
- “Rule Mining Modules on Semantic Query Optimisation”, Focus on Advances in Decision Technology and Intelligent Information Systems, 2004, Baden-Baden, Germany
- “An Internet Modal Automation System”, International Conference on Innovation in Higher Education Centre for Technology in Learning and Teaching, May 16-19, 2003, Kyiv, Ukraine
- “Ders Takibinde Internet Modeli”, Pamukkale Üniversitesi Bilgi Teknolojileri Kongresi II 1-4 Mayıs 2003, Pamukkale Üniversitesi (*National Conference, presented in Turkish*)

Participations

- Training course on Introduction to Explainable Deep Learning on Supercomputers, Dec. 04-06, 2023, Forschungszentrum Jülich, Germany
- IFAC 22nd World Congress of the International Federation of Automatic Control, 9-14 July 2023, Yokohama, Japan
- 21st International Conference on Control, Automation, and Systems (ICCAS 2021), Online, Oct. 12-15, 2021
- IEEE 17th International Conference on Automation Science and Engineering (CASE), Online, Aug. 23-27, 2021
- IEEE 4th International Conference on Robotic Computing (IRC 2020), Online, November 9-11, 2020
- Research Visit hosted by Prof. Dung-An Wang, National Chung Hsing University, March 8-12, 2020, Taiwan
- ASEAN IVO Forum 2019, November 20, 2019, Manila-Philippines
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2010), October 18-22, 2010, Taiwan
- 20th International Conference on Pattern Recognition, ICPR 2010, August 23rd-26th, 2010, Istanbul-Turkey
- 10th European Conference on Computer Vision, ECCV 2008, October 12th-18th, 2008, Marseille-France
- Special Course on Convex Optimization, June 16-20, 2008, Technical University of Denmark
- Ph.D. School on Optimization in Computer Vision, May 19-23, 2008, Technical University of Denmark
- IEEE International Conference on Robotics and Automation, ICRA 2005, April 18-22, 2005, Barcelona-Spain.

Certifications

- How to be a good teacher, the complete course (2021), Udemy
- The Foreign Language (Science English) Test (YOKDIL)² Result: 93.75 over 100, Spring- 2017
- The Foreign Language (English) Test (YDS)² Result: 88.75 over 100, Autumn-2016
- The Foreign Language (English) Examination for Civil Servants (KPDS)² Result: 87 over 100, May 2010

² Examinations have been done by the Republic of Türkiye Higher Education Council Student Selection and Placement Center (ÖSYM) (www.osym.gov.tr)

- Diploma de Estudis Avançats (DEA³), University of Girona, 2007
- Interuniversity Board Foreign Language (Science English) Examination (UDS)¹ Result:78.75 over 100, March 2004
- Postgraduate Education Entrance Examination (LES)² Result: 74.803 over 80, May 12, 2002
- Spanish Language Course Level I, II, and III certifications from Servicio de Lenguas Modernas de Universitat de Girona 2005-2006
- Fourth (D) and Third (C) Category basketball coach license from the Turkish Basketball Federation, from 2000 to 2005.

Public Profiles

- Google Scholar: <https://scholar.google.com/citations?user=0K866ugAAAAJ>
- Scopus: <https://www.scopus.com/authid/detail.uri?authorId=24733903500>
- ORCID: <https://orcid.org/0000-0003-0661-9536>
- ResearcherID: <https://www.webofscience.com/wos/author/record/1166891>
- DBLP: <https://dblp.org/pid/88/3791.html>
- ResearchGate: <https://www.researchgate.net/profile/Armagan-Elibol>

³ The DEA was for the elaboration of the old PhD proposal and the commencement or a prerequisite of PhD research in Spain before European Higher Education Area (EHEA) and Bologna process, https://en.wikipedia.org/wiki/Master_of_Advanced_Studies
 Armagan Elibol, Ph.D. <https://aelibol.github.io>