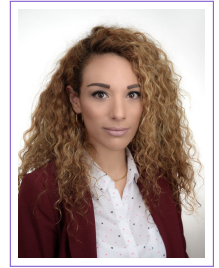


# Georgia Chalvatzaki

## Curriculum Vitae

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### Personal Data

Current position **Assistant Professor (W1)**, *Technische Universität Darmstadt*, Computer Science Department, Intelligent Robotic Systems for Assistance Group.  
Birthdate 06-05-1988 Birthplace Athens (Greece)

### Research Interests

- **Autonomous Robots:** Grasping, Manipulation, Mobile Manipulation, Motion Planning, Task Planning, Assistive Robotics, Mobile Robotics, Robotic Perception, Optimal Control, Hierarchical Control, Adaptive Control, Detection and Tracking
- **Artificial Intelligence Methods:** Supervised, Unsupervised, and Reinforcement Learning, Deep Learning, Imitation Learning, Model Learning, Regression, Attention-based learning, Few-shot/One-shot Learning, Transfer Learning, Multi-task Learning
- **Human-Robot Interaction:** Human motion modelling, Intention prediction, Human attention modelling, Human activity recognition, Human-centered systems, Shared Control/Autonomy, Collaborative/Cooperative interaction

### Educational Background

- 2012 – 2019 **Ph.D. in Engineering**, *National Technical University of Athens (NTUA)*, Greece,  
Thesis: *Human-Centered Modeling for Assistive Robotics: Stochastic Estimation and Robot Learning in Decision Making*, Advisor: Costas Tzafestas – Defended: 23-12-2019  
Committee: Costas Tzafestas (NTUA), Petros Maragos (NTUA), Konstantinos Kyriakopoulos (NTUA), Stefanos Kollias (NTUA), Andreas Stafylopatis (NTUA), Antonios Argyros (University of Crete), Antonios Tzes (NYU Abu Dhabi).
- 2006 – 2012 **Diploma in Electrical and Computer Engineering**, *National Technical University of Athens (NTUA)*, Greece,  
Thesis: *A system for recognizing and segmenting simple radiographic images of hands for detecting their geometric characteristics and functional parts*,  
Committee: Elias Koukoutsis (NTUA), Konstantinos Papaodysseas (NTUA), Vaseilios Loumos (NTUA).

### Professional Experience

#### Academic

- 02/2022 – **Assistant Professor**, *Dept. of Computer Science, Technische Universität Darmstadt, Darmstadt, Germany*, now Head of the intelligent Robotic Systems for Assistance Group.
- 03/2021 – **Independent Research Group Leader**, *Dept. of Computer Science, Technische Universität Darmstadt, Darmstadt, Germany*, 01/2022 Head of the intelligent Robotic Systems for Assistance Group.
- 03/2021 – **Research Associate**, *Projects Aristotle, CHIRON and RoboTrust*, *Dept. of Computer Science, Technische Universität Darmstadt, Darmstadt, Germany*, now Scientific collaboration with Intelligent Autonomous Systems Group.

- 10/2019 – **Postdoctoral Researcher**, *Intelligent Autonomous Systems Group*, Dept. of Computer Science, Technische Universität Darmstadt, Darmstadt, Germany, Scientific Projects: Skills4Robots (ERC project No. 640554), KoBo (BMBF), RoboTrust (Hessian state funding).
- 02/2013 – **Research Assistant**, *Institute of Communications & Computer Systems (ICCS)*, Athens, Greece.,  
09/2019 Scientific Projects: iWalk (National Funding, No. 5030856 National Funding), BabyRobot (Horizon2020, No. 687831), iSupport (Horizon2020, No. 643666), MOBOT (FP7 No. 600796).

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### Industrial

- 2018 – 2019 **Consultant**, *Vertliner Start-up company*, Athens, Greece, Development of 3D SLAM module for UAVs.
- 2008 – 2012 **Office Administrator**, *Nakis, Koukas, Dimitriou and Associates Law Firm*, Athens, Greece.
- 2007 – 2008 **Telecommunications Engineer**, *Hellenic Telecommunications Organization*, Athens, Greece.

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### External Funding

- 2021 – 2027 **Emmy Noether DFG**, *Project: Robot Learning of Mobile Manipulation for Intelligent Assistance*, TUDa:€1,714,498, Grant. No. 448644653.
- 2021 **Hessian AI Connectom Fund**, *Project: Robot Learning of Long-Horizon Manipulation bridging Object-centric Representations to Knowledge Graphs*, TUDa:€40,000.
- 2021 **EU - Forschungsförderung – EU for You!**, *EU start-up fund for Horizon-Europe*, TUDa: €19,000.
- 2021 **DFG**, *Project\*: Aristotle – See, Touch and Manipulate: Robot Learning for Dexterous Robot Bimanual Manipulation through Vision and Touch*, TUDa: €200,000, \*author of proposal – unofficial PI.
- 2022 – 2024 **Daimler and Benz Foundation Scholarship**, *Project: Intelligent Human-Robot Interaction for Bidirectional Object Handovers*, TUDa: €40,000.

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### Awards

- 2022 **Daimler and Benz Foundation Scholarship**.
- 2021 **Finalist for Dr. Hans Messer Foundation Prize**.
- 2021 **AI Newcomer**, *German Informatics Society, BMBF, Germany*.
- 2020 **RSS Pioneer**, *Robotics Science and Systems Conference*.
- 2019 **IEEE RAS Travel Award**, *IROS 2019*.
- 2017 – 2019 **IEEE RAS Travel Award**, *for participating to ICRA 2019, 2018, 2017*.
- 2018 **Best short Paper Award**, *27th IEEE International Symposium on Robot and Human Interactive Communication (RoMan)*.
- 2014-2020 **Thomaidion Award**, *NTUA, Greece*, for Scientific Contributions the years 2014, 2015, 2016, 2018, 2019, 2020.
- 2015 **Best Paper Award**, *8th International Conference on Integrated Modeling and Analysis in Applied Control and Automation*.
- 2014 **Best Student Paper Finalist**, *4th IEEE International Conference on Wireless Mobile Communication and Health*.
- 2006 **Scholarship**, *from the Egyptian-Greek Association for excelling the Panhellenic competition for University admission*.

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### Teaching

- 2022 **Lecturer**, *Statistical Machine Learning*, Elective course, Computer Science Department, Summer Term, TU Darmstadt, Germany.

- 2022 **Lecturer**, *Reinforcement Learning: From foundations to Deep Approaches*, Elective course, Computer Science Department, Summer Term, TU Darmstadt, Germany.
- 2020-now **Teaching Assistant**, *Robot Learning-Integrated project*, Elective course, Computer Science Department, Winter and Summer Term, TU Darmstadt, Germany.
- 2012 – 2018 **Teaching Assistant**, *Course Robotics I: Analysis and Control*, Fall semesters, School of Electrical & Computer Engineering, NTUA, Greece.
- 2012 – 2018 **Teaching Assistant**, *Course Robotics II: Intelligent Robotics Systems*, Summer semesters, School of Electrical & Computer Engineering, NTUA, Greece.
- 2012 – 2018 **Teaching Assistant**, *Course on Robotics Control Systems*, Summer semesters, Ms.C. Programm on Autonomous Systems, Joint programm Schools of Electrical & Computer Engineering and Mechanical Engineering, NTUA, Greece.

## Student Supervision

### Technische Universität Darmstadt

- 06/2021 – **Ph.D. Supervisor**, *Snehal Jauhri*,  
now Robot Learning of Robust Mobile Manipulation of Household Tasks.
- 09/2021 – **Ph.D. Supervisor**, *Ali Younes*,  
now Robot Learning for Long-horizon Planning of Manipulation Tasks.
- 06/2021 – **Ph.D. Co-Supervisor**, *Kay Hansel*,  
now Learning Shared-control for assistive teleoperation.
- 09/2020 – **Ph.D. Co-Supervisor**, *Niklas Funk*,  
now Learning Intelligent Robot Assembly for Architectural Construction.
- 2022 **M.Sc. Supervisor**, *Kuo Zhang*,  
Learning safety constraints for Human-Robot Interaction (ongoing).
- 2022 **M.Sc. co-Supervisor**, *Maximilian Tölle*,  
Curriculum Adversarial Reinforcement Learning (ongoing).
- 2021 **M.Sc. Supervisor**, *Maximilian Niessing*,  
Learning latent object representations for grasp generation with generative-adversarial models (ongoing).
- 2021 **M.Sc. Supervisor**, *Daljeet Nandha*,  
Building Task Plans from Robot Knowledge Graphs (ongoing).
- 2021 **M.Sc. Supervisor**, *Yannik Frisch*,  
Self-supervised Visual Imitation Learning (ongoing).
- 2021 **M.Sc. Supervisor**, *Jan Schneider*,  
Visual Model Predictive Actor-Critic Algorithms (ongoing).
- 2021 **M.Sc. Supervisor**, *Simon Kiefhaber*,  
6D Object Pose Tracking with Energy-based models (ongoing).
- 2021 **M.Sc. Supervisor**, *Lei Xu*,  
Integrated AI planning for general-purpose robot manipulation.
- 2021 **M.Sc. Supervisor**, *Cedric Cerstoff*,  
Memory Representations for Partially Observable Reinforcement Learning.
- 2021 **M.Sc. Supervisor**, *Shrirang Satonkar*,  
Benchmarking grasping algorithms for mobile manipulation, external student from HHU Heidelberg.
- 2021 **M.Sc. Supervisor**, *Axel Patzwahl*,  
Multi-sensor Fusion for Target Motion Prediction with an Application to Robot Baseball.

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## National Technical University of Athens

- 2021 **M.Sc. Supervisor**, *Ioannis Asmanis*,  
3D Visual Semantic SLAM for indoor navigation.
- 2018 **M.Sc. Supervisor**, *Theodoros Tsitsimis*,  
Learning cooperative grasping of objects and adaptive robot dexterity in child-robot interaction environments.
- 2021 **M.Sc. Supervisor**, *Jack Hadfield*,  
Virtual agent for object assembly assistance using object pose estimation.

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## Community Services

- 2021 – now **Co-Chair**, *IEEE Technical Committee on Mobile Manipulation*, with co-Chairs Nikolaus Correll (University of Colorado Boulder, USA), Kensuke Harada (AIST, Japan), Roberto Martin-Martin (Stanford, USA).
- 2022 – now **Co-Chair**, *IEEE Women in Engineering, Robotics and Automation Society*, with Chair Karinne Ramirez Amaro (Chalmers University of Technology, Sweden) and co-Chair Daniel Leidner (DLR, Germany).

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## Editing

- 2021 – now **Associate Editor**, for *IEEE Robotics and Automation Letters (RA-L)*.

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## Conferences/Workshops/Events Organization

- 2021 **Co-organizer of the 2021 Mobile Manipulation Hackathon in IROS 2021**, (*cancelled due to CoVID-19 restrictions*).
- 2021 **General Co-Chair RSS Pioneers Workshop**, *part of the organizing committee of RSS 2021*.
- 2020 **Organizer RoboTrust Workshop**, *in the 2020 International conference of Social Robotics*.

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## Reviewing Activities

- Journals IEEE Robotics & Automation Letters, IEEE Transactions on Human-Machine Systems, Robotics and Autonomous Systems, Frontiers in Robotics & AI.
- Conferences IEEE International Conference on Robotics and Automation (ICRA), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Robotics Science & Systems (RSS), Conference on Robot Learning (CoRL), IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob), IEEE Mediterranean Conference on Control and Automation (MED), IEEE European Control Conference (ECC), IEEE International Conference on Robot & Human Interactive Communication (ROMAN), AAAI Conference on Artificial Intelligence (AAAI), International Conference of Learning Representations (ICLR).
- Proposals DFG.

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## Talks

- 02/2021 **Robot learning for intelligent robotic assistants**, *at the Robotic Learning Seminar series of The Robotics and Embodied AI Lab and Mila, Montreal*.
- 02/2021 **Robot learning of Mobile Manipulation**, *at the Group on Failure and Uncertainty Tolerant Universal Robot Operation, DLR*.
- 03/2021 **Towards intelligent robotic assistants: human perception, accelerated skill learning, and adaptive planning**, *at the Learning and Intelligent Systems group, TU Berlin*.
- 04/2021 **Accelerated reinforcement learning of manipulation tasks**, *at the seminar on AI in Robotics, University of Toronto*.

- 05/2021 **Towards intelligent robotic assistants: human perception, accelerated skill learning, and adaptive planning**, , at the *IEEE RAS NTUA student branch*.
- 07/2021 **Robot Learning for intelligent Robotic Assistants**, at the *Monash Robotics Seminar, Monash University*.

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## Keynotes – Panels

- 10/2021 **How can multi-sensory data help us obtain better assistive robots?**, *Keynote speaker the ACM ICMI Workshop: Interactive Multimodal Learning'21 (online)*.
- 03/2022 **HRI Pioneers Workshop of the 2022 ACM/IEEE International Conference on Human-Robot Interaction**, *Academic Panel (online)*.

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## Media coverage

- 01/2021 **Interview at the local newspaper "Demokratiki Rodou"**, Greece.
- 03/2021 **Interview at the hessian magazine "Mathilde"**, Germany.
- 03/2021 **Interview at the TV Program "Creta today"**, Greece.
- 03/2021 **Interview at the blog "Tilos news"**, Greece.
- 03/2021 **Interview at the radio program "All World Greece" of th national radio Proto Thema**, Greece.
- 03/2021 **Interview at the radio program "Greeks Abroad" of the national radio ERT**, Greece.
- 03/2021 **Interview at the radio program "Dodecanese" of the local radio ERT-Dodecanese**, Greece.
- 04/2021 **Interview at the radio program "Good Morning with Alpha" of th national radio Alpha Radio**, Greece.
- 04/2021 **Interview at the radio program "Good Morning with Alpha" of th national radio Alpha Radio**, Greece.
- 05/2021 **Interview at the Radio Darmstadt**.
- 05/2021 **Interview at the radio program "Künstliche Intelligenz – die Nachwuchstalente kommen aus Hessen "**, Germany.
- 03/2022 **Interview at the national newspaper "To Vima"**, Greece.

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## Languages

- Greek **Native Speaker**
- English **Proficient (C2)**
- French **Upper Intermediate (B2)**
- German **Intermediate (B1)**

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### Journals

- [1] Snehal Jauhri, Jan Peters, and **Georgia Chalvatzaki**. Robot learning of mobile manipulation with reachability behavior priors. *IEEE Robotics and Automation Letters* (under review), 2022.
- [2] Tuan Dam, **Georgia Chalvatzaki**, Jan Peters, and Joni Pajarinen. Monte carlo robot path planning. *IEEE Robotics and Automation Letters* (under review), 2022.
- [3] Boris Belousov, Bastian Wibranek, Jan Schneider, Tim Schneider, **Georgia Chalvatzaki**, Jan Peters, and Oliver Tessman. Robotic architectural assembly with tactile skills: Simulation and optimization. *Automation in Construction*, 133:104006, 2022.
- [4] George Moustiris, Nikolaos Kardaris, Antigoni Tsiami, **Georgia Chalvatzaki**, Petros Koutras, Athanasios Dometios, Paris Oikonomou, Costas Tzafestas, Petros Maragos, Eleni Efthimiou, Xanthi Papageorgiou, Stavroula-Evita Fotinea, Yiannis Koumpouros, Anna Vacalopoulou, Effie Papageorgiou, Alexandra Karavasili, Foteini Koureta, Dimitris Dimou, Alexandros Nikolakakis, Konstantinos Karaiskos, and Panagiotis Mavridis. The i-walk lightweight assistive rollator: First evaluation study. *Frontiers in Robotics and AI*, 8:272, 2021.
- [5] Christian Werner, **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Costas S Tzafestas, Jürgen M Bauer, and Klaus Hauer. Assessing the concurrent validity of a gait analysis system integrated into a smart walker in older adults with gait impairments. *Clinical Rehabilitation*, 33(10):1682–1687, 2019. PMID: 31131630.
- [6] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Petros Maragos, and Costas S Tzafestas. Learn to adapt to human walking: A model-based reinforcement learning approach for a robotic assistant rollator. *IEEE Robotics and Automation Letters*, 4(4):3774–3781, 2019.
- [7] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Costas S Tzafestas, and Petros Maragos. Augmented human state estimation using interacting multiple model particle filters with probabilistic data association. *IEEE Robotics and Automation Letters*, 3(3):1872–1879, 2018.

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### Conferences

- [8] Puze Liu, Kuo Zhang, Davide Tateo, Snehal Jauhri, Jan Peters, and **Georgia Chalvatzaki**. Regularized deep signed distance fields for reactive motion generation. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (submitted), 2022.
- [9] Tim Schneider, Boris Belousov, **Georgia Chalvatzaki**, Diego Romeres, Devesh Jha, and Jan Peters. Active exploration for robotic manipulation. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (submitted), 2022.
- [10] Alexander Lambert, Julen Urain, An Thai Lee, **Georgia Chalvatzaki**, Byron Boots, and Jan Peters. Learning implicit priors for motion optimization. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (submitted), 2022.
- [11] Niklas Funk, Svenja Menzenbach, **Georgia Chalvatzaki**, and Jan Peters. Graph-based reinforcement learning meets mixed integer programs: An application to 3d robot assembly discovery. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (submitted), 2022.

- [12] Carlo D'Eramo and **Georgia Chalvatzaki**. Prioritized sampling with intrinsic motivation in multi-task reinforcement learning. *IEEE IJCNN (submitted)*, 2022.
- [13] Niklas Funk, **Georgia Chalvatzaki**, Boris Belousov, and Jan Peters. Learn2assemble with structured representations and search for robotic architectural construction. *Conference on Robot Learning (CoRL)*, 2021.
- [14] Danai Efstathiou, **Georgia Chalvatzaki**, Athanasios Dometios, Dionisios Spiliopoulos, and Costas S. Tzafestas. Deep leg tracking by detection and gait analysis in 2d range data for intelligent robotic assistants. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2021.
- [15] Samuele Tosatto, **Georgia Chalvatzaki**, and Jan Peters. Contextual latent-movements off-policy optimization for robotic manipulation skills. *IEEE International Conference on Robotics and Automation (ICRA)*, 2021.
- [16] Andrew S Morgan, Daljeet Nandha, **Georgia Chalvatzaki**, Carlo D'Eramo, Aaron M Dollar, and Jan Peters. Model predictive actor-critic: Accelerating robot skill acquisition with deep reinforcement learning. *2021 IEEE International Conference on Robotics and Automation*, 2021.
- [17] Qin Li, **Georgia Chalvatzaki**, Jan Peters, and Yong Wang. Directed acyclic graph neural network for human motion prediction. *IEEE International Conference on Robotics and Automation (ICRA)*, 2021.
- [18] Nikolaos Gkanatsios, **Georgia Chalvatzaki**, Petros Maragos, and Jan Peters. Revisiting grasp map representation with a focus on orientation in grasp synthesis. In *Workshop on Visual Learning and Reasoning for Robotic Manipulation, Robotics Science and Systems (RSS)*, 2020.
- [19] **Georgia Chalvatzaki**, Petros Koutras, Antigoni Tsiami, Costas S. Tzafestas, and Petros Maragos. i-walk intelligent assessment system: Activity, mobility, intention, communication. In Adrien Bartoli and Andrea Fusiello, editors, *Computer Vision – ECCV 2020 Workshops*, pages 500–517, Cham, 2020. Springer International Publishing.
- [20] Isidoros Marougkas, Petros Koutras, Nikos Kardaris, Georgios Retsinas, **Georgia Chalvatzaki**, and Petros Maragos. How to track your dragon: A multi-attentional framework for real-time rgb-d 6-dof object pose tracking. In Adrien Bartoli and Andrea Fusiello, editors, *Computer Vision – ECCV 2020 Workshops*, pages 682–699, Cham, 2020. Springer International Publishing.
- [21] Jack Hadfield, **Georgia Chalvatzaki**, Petros Koutras, Mehdi Khamassi, Costas S Tzafestas, and Petros Maragos. A deep learning approach for multi-view engagement estimation of children in a child-robot joint attention task. In *2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019.
- [22] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Petros Maragos, and Costas S Tzafestas. Learn to adapt to human walking: A model-based reinforcement learning approach for a robotic assistant rollator. In *2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019.
- [23] Petros Koutras, **Georgia Chalvatzaki**, Antigoni Tsiami, Alexandros Nikolakakis, Costas S. Tzafestas, and Petros Maragos. Video processing and learning in assistive robotic applications. In *2019 IEEE International Conference on Image Processing (ICIP)*, pages 2457–2457, 2019.
- [24] **Georgia Chalvatzaki**, Petros Koutras, Jack Hadfield, Xanthi S Papageorgiou, Costas S Tzafestas, and Petros Maragos. Lstm-based network for human gait stability prediction in an intelligent robotic rollator. In *2019 International Conference on Robotics and Automation (ICRA)*, 2019.
- [25] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Costas S Tzafestas, and Petros Maragos. Comparing the impact of robotic rollator control schemes on elderly gait using on-line lrf-based gait



- analysis. In *A Workshop on Mobile Robot Assistants for the Elderly (MoRobAE) in 2019 IEEE International Conference on Robotics and Automation (ICRA)*, 2019.
- [26] Xanthi S Papageorgiou, **Georgia Chalvatzaki**, Eleni Efthimiou, Stavroula-Evita Fotinea, Alexandra Karavasili, Costas S Tzafestas, Petros Maragos, Anna Vacalopoulou, and Theodore Goulas. User centered hri design for an intelligent robotic rollator. In *A Workshop on Mobile Robot Assistants for the Elderly (MoRobAE) in 2019 IEEE International Conference on Robotics and Automation (ICRA)*, 2019.
  - [27] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Costas S Tzafestas, and Petros Maragos. Augmented human state estimation using interacting multiple model particle filters with probabilistic data association. In *2018 IEEE International Conference on Robotics and Automation (ICRA)*. IEEE, 2018.
  - [28] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Petros Maragos, and Costas S Tzafestas. User-adaptive human-robot formation control for an intelligent robotic walker using augmented human state estimation and pathological gait characterization. In *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 6016–6022. IEEE, 2018.
  - [29] Mehdi Khamassi, **Georgia Chalvatzaki**, Theodore Tsitsimis, George Velentzas, and Costas Tzafestas. A framework for robot learning during child-robot interaction with human engagement as reward signal. In *2018 27th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN) (Best short Paper Award)*, pages 461–464. IEEE, 2018.
  - [30] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, and Costas S Tzafestas. Towards a user-adaptive context-aware robotic walker with a pathological gait assessment system: First experimental study. *2017 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2017.
  - [31] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Costas S Tzafestas, and Petros Maragos. Comparative experimental validation of human gait tracking algorithms for an intelligent robotic rollator. In *2017 IEEE International Conference on Robotics and Automation (ICRA)*, pages 6026–6031. IEEE, 2017.
  - [32] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Costas S Tzafestas, and Petros Maragos. Hmm-based pathological gait analyzer for a user-adaptive intelligent robotic walker. 2017.
  - [33] Xanthi S Papageorgiou, **Georgia Chalvatzaki**, Athanasios C Dometios, Costas S Tzafestas, and Petros Maragos. Intelligent assistive robotic systems for the elderly: two real-life use cases. In *Proceedings of the 10th International Conference on Pervasive Technologies Related to Assistive Environments*, pages 360–365, 2017.
  - [34] Xanthi S Papageorgiou, **Georgia Chalvatzaki**, Konstantinos-Nektarios Lianos, Christian Werner, Klaus Hauer, Costas S Tzafestas, and Petros Maragos. Experimental validation of human pathological gait analysis for an assisted living intelligent robotic walker. In *2016 6th IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob)*, pages 1086–1091. IEEE, 2016.
  - [35] **Georgia Chalvatzaki**, Xanthi S Papageorgiou, Christian Werner, Klaus Hauer, Costas S Tzafestas, and Petros Maragos. Experimental comparison of human gait tracking algorithms: Towards a context-aware mobility assistance robotic walker. In *2016 24th Mediterranean Conference on Control and Automation (MED)*, pages 719–724. IEEE, 2016.
  - [36] Xanthi S Papageorgiou, George P Moustiris, Vassilis Pitsikalis, **Georgia Chalvatzaki**, Athanasios Dometios, Nikolaos Kardaris, Costas S Tzafestas, and Petros Maragos. User-oriented cognitive interaction and control for an intelligent robotic walker. 2015.
  - [37] Costas S. Tzafestas, Xanthi S. Papageorgiou, George P Moustiris, **Georgia Chalvatzaki**, and Athanasios Dometios. User-oriented human-robot interaction for an intelligent walking assistant



robotic device. In *IROS'2015 Full day Workshop Cognitive Mobility Assistance Robots: Scientific Advances and Perspectives*, 2015.

- [38] **Georgia Chalvatzaki**, Xanthi S. Papageorgiou, and Costas S. Tzafestas. Gait modelling for a context-aware user-adaptive robotic assistant platform. *Proceedings of the 8th International Conference on Integrated Modeling and Analysis in Applied Control and Automation (Best Paper Award)*, 2015.
- [39] Xanthi S Papageorgiou, **Georgia Chalvatzaki**, Costas S Tzafestas, and Petros Maragos. Hidden markov modeling of human pathological gait using laser range finder for an assisted living intelligent robotic walker. In *2015 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 6342–6347. IEEE, 2015.
- [40] **Georgia G Chalvatzaki**, Georgios Pavlakos, Kevis Maninis, Xanthi S Papageorgiou, Vassilis Pitsikalis, Costas S Tzafestas, and Petros Maragos. Towards an intelligent robotic walker for assisted living using multimodal sensorial data. In *2014 4th International Conference on Wireless Mobile Communication and Healthcare-Transforming Healthcare Through Innovations in Mobile and Wireless Technologies (MOBIHEALTH) (Best Student Paper Award Finalist)*, pages 156–159. IEEE, 2014.
- [41] Xanthi S Papageorgiou, **Georgia Chalvatzaki**, Costas S Tzafestas, and Petros Maragos. Hidden markov modeling of human normal gait using laser range finder for a mobility assistance robot. In *2014 IEEE International Conference on Robotics and Automation (ICRA)*, pages 482–487. IEEE, 2014.

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#### Preprints

- [42] Tianyu Ren, **Georgia Chalvatzaki**, and Jan Peters. Extended task and motion planning of long-horizon robot manipulation. *arXiv preprint arXiv:2103.05456*, 2021.
- [43] Georgia Chalvatzaki, Nikolaos Gkanatsios, Petros Maragos, and Jan Peters. Orientation attentive robotic grasp synthesis with augmented grasp map representation. *arXiv preprint arXiv:2006.05123*.

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#### Book chapters

- [44] Xanthi S Papageorgiou, Costas S Tzafestas, Petros Maragos, Georgios Pavlakos, Georgia **Chalvatzaki**, George Moustiris, Iasonas Kokkinos, Angelika Peer, Bartlomiej Stanczyk, Evita-Stavroula Fotinea, et al. Advances in intelligent mobility assistance robot integrating multimodal sensory processing. In *International conference on universal access in human-computer interaction*, pages 692–703. Springer, Cham, 2014.
- [45] George Moustiris, Nikolaos Kardaris, Antigoni Tsiami, Georgia **Chalvatzaki**, Petros Koutras, Athanasios Dometios, Paris Oikonomou, Costas Tzafestas, Petros Maragos, Eleni Efthimiou, Xanthi Papageorgiou, Stavroula-Evita Fotinea, Yiannis Koumpouros, Anna Vacalopoulou, Alexandra Karavasili, Alexandros Nikolakakis, Konstantinos Karaikos, and Panagiotis Mavridis. The i-walk assistive robot. In Matteo Saveriano, Erwan Renaudo, Antonio Rodríguez-Sánchez, and Justus Piater, editors, *Human-Friendly Robotics 2020*, pages 31–45, Cham, 2021. Springer International Publishing.
- [46] Xanthi S. Papageorgiou, Georgia **Chalvatzaki**, Athanasios C. Dometios, and Costas S. Tzafestas. Human-centered service robotic systems for assisted living. In Nikos A. Aspragathos, Panagiotis N. Koustoumpardis, and Vassilis C. Moulianitis, editors, *Advances in Service and Industrial Robotics*, pages 132–140, Cham, 2019. Springer International Publishing.

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#### Theses

- [47] **Georgia Chalvatzaki**. *Human-Centered Modeling for Assistive Robotics: Stochastic Estimation and Robot Learning in Decision Making*. PhD thesis, National Technical University of Athens, 2019.

- [48] **Georgia Chalvatzaki.** A system for recognizing and segmenting simple radiographic images of hands for detecting their geometric characteristics and functional parts. Master's thesis, National Technical University of Athens, 2012.