

# Curriculum Vitae

## Carlos Hernandez Corbato

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Department of Cognitive Robotics  
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Google Scholar: <https://scholar.google.nl/citations?user=aZ6Cuh0AAAAJ&hl=en> (Citations: 921, h-index: 16)

### Current Position

May'19 – Assistant Professor. Cognitive Robotics department, 3mE, TU Delft, The Netherlands

### Previous Positions

'15 – '19 Postdoctoral Researcher. Cognitive Robotics department, 3mE, TU Delft, The Netherlands

'12 – '15 Manager and founding partner. Global Incubator S.L., Madrid, Spain

'11 – '12 Researcher. Autonomous Systems Laboratory, Univ. Politecnica de Madrid, Spain

'06 – '11 MSc & PhD student. Autonomous Systems Laboratory, Univ. Politecnica de Madrid, Spain

### Education

'08 – '13 PhD on Automation and Robotics, Escuela Tecnica Superior de Ingenieros Industriales, Univ. Politecnica de Madrid, Spain  
Advisor: Ricardo Sanz, Ignacio Lopez  
PhD thesis: *Model-based Self-awareness Patterns for Autonomy*

'06 – '08 MSc Automation and Robotics, Escuela Tecnica Superior de Ingenieros Industriales, Univ. Politecnica de Madrid, Spain  
Advisor: Ricardo Sanz  
MSc thesis: *Adding consciousness to cognitive architectures*

'01 – '06 Dipl. Ingeniero Industrial (equivalent to BSc + MSc), Escuela Tecnica Superior de Ingenieros Industriales, Univ. Politecnica de Madrid, Spain

### Fellowships And Awards

'16 Winner of the international robotics competition “Amazon Picking Challenge” (both Picking and Stacking categories)

'07 – '11 Beca de posgrado para la Formación del Profesorado Universitario (FPU) - Ref AP2006-02778, Escuela Tecnica Superior de Ingenieros Industriales, Universidad Politecnica de Madrid, Spain

### Short Bio

I am an Assistant Professor at the Cognitive Robotics Department of TU Delft, The Netherlands. Currently, I am the PI for TU Delft of the EU projects CoreSense, METATOOL and REMARO, and I teach in the MSc Robotics Program, specifically Knowledge Representation and Symbolic Reasoning (elective course) and systems engineering in the Multidisciplinary Project course . My research interests are related to cognition and systems engineering, and include: software architectures for intelligent robot control, knowledge representation and reasoning, model-based systems engineering and self-adaptive systems.

I hold MSc degrees in engineering (2006) and in automation and robotics (2008) from the Universidad Politecnica de Madrid, and obtained my PhD degree from the same university in 2013, working on self-aware autonomous systems at the Autonomous Systems Laboratory. I remained as an associated researcher in that lab till 2015, while working as co-founder and project leader at [www.capitalcertainty.es](http://www.capitalcertainty.es) on open innovation projects. In 2015 I joined TU Delft as a postdoc, where I have served as the scientific coordinator for the EU-funded projects Factory-in-a-day, ROSIN and MROS (as PI). In 2016, I won the [Amazon Robotics Challenge](#) with TU Delft team.

### Invited Talks (excluding conference presentations)

- TU/e Robotics seminar, Eindhoven, Oct 2023  
“2 Needs for autonomous robots: Systems Engineering and Self-Awareness”
- EASE PhD school, Univ. Bremen, Germany, Sep 2022  
“Systems engineering, self-adaptation and robots with a deep understanding”
- “Introduction to Model-Based Systems Engineering” PhD school, Univ. Alcala de Henares, Spain, July 2022  
*Metacontrol: self-adaptive architectures for autonomous robots’ control*
- INCOSE Webinar with Prof. Jose Luis Fernandez, online Nov. 2020  
“ISE&PPOOA a MBSE Methodology from System to Software Architecture”
- Workshop organized by the TU Delft AgriFood Institute, Delft (online), 2020
- German Rese arch Center for Artificial Intelligence GmbH, Bremen, Germany, March 2019
- Artificial Intelligence Institute, Univ. Bremen, Germany, Feb 2019
- ROS-Industrial Conference, Stuttgart, Germany, 2018
- Workshop “Experimental Robotic Grasping and Manipulation -- Benchmarks, Datasets, and Competitions” @IROS18, Madrid 2018
- Workshop MORSE 2018 @MODELS18 Conference, Copenhagen, Denmark, 2018
- ROS-Industrial Conference, Stuttgart, Germany, 2017
- International Masterclass Robotics, Delft, The Netherlands, 2017
- ROS-Industrial Conference, Stuttgart, Germany, 2016
- Robot Forum Assembly, Parma, Italy, 2016
- Seminar at Universidad de Zaragoza, Spain, 2015

### Teaching Activities

- 2020 – 2023 Responsible instructor - *Knowledge Representation and Reasoning*, elective course in the program MSc Robotics, Mechanical, Maritime and Materials Engineering / Cognitive Robotics Department, Delft University of Technology, The Netherlands
- 2022 – 2023 Coordinator – Multidisciplinary Project, mandatory course in the program MSc Robotics, Mechanical, Maritime and Materials Engineering / Cognitive Robotics Department, Delft University of Technology, The Netherlands
- 2021 – 2023 Lecturer – Multidisciplinary Project, mandatory course in the program MSc Robotics, Mechanical, Maritime and Materials Engineering / Cognitive Robotics Department, Delft University of Technology, The Netherlands
- 2018 – 2020 Online course – Hello (real) world with the *Robot Operating System*, Mechanical, Maritime and Materials Engineering / Cognitive Robotics Department, Delft University of Technology, The Netherlands
- 2018 – 2019 Supervision of 2 bachelor end project groups – Mechanical, Maritime and Materials Engineering / Cognitive Robotics Department, Delft University of Technology, The Netherlands
- 2015 – 2017 Program Coordinator – *Minor Robotics*, Mechanical, Maritime and Materials Engineering / Cognitive Robotics Department, Delft University of Technology, The Netherlands
- 2009 – 2011 Lecturer – State-Space Control, Escuela Tecnica Superior de Ingenieros Industriales, Universidad Politecnica de Madrid, Spain

### **Organisation of Scientific Meetings and PhD schools**

- 2024 Organizing committee “Summer school for software engineering in robotics”, to be held summer 2024 (partial funding from ACM secured)
- 2022 Organizer of the PhD school and workshop on “Control software for underwater robots”, in the context of the REMARO ITN network, Delft, June 2022
- 2022 Co-organizer and lecturer in the PhD school “Introduction to Model-Based Systems Engineering”, Univ. Alcala de Henares, Spain, July 2022
- 2018 Co-organizer, workshop Teaching Robotics with ROS at European Robotics Forum, ca. 40 participants, Finland
- 2011 Co-organizer, First RETECOG workshop 2011: The Architectures of Mind, ca. 60 participants, Spain
- 2010 Publications Chair and Organizing Committees, BICS 2010 - BRAIN INSPIRED COGNITIVE SYSTEMS, Spain

### **Institutional Responsibilities**

- 2019 – Faculty member, Delft University of Technology, The Netherlands
- 2019 – Graduate Student Advisor for Corrado Pezzato, Delft University of Technology, The Netherlands

### **Reviewer Activity**

- 2017 – Review panel member, Board ROSIN H2020 cascade funding
- 2019 – Guest Editor Special Issue of IJARS "Open Source Robotics"

#### Journals

- 2020 – Reviewer Autonomous Robots
- 2018 – Reviewer IEEE Access
- 2018 – Reviewer Systems Engineering (2018)
- 2017 – Reviewer Integrated Computer-Aided Engineering ICAE (2017, 2018)
- 2017 – IEEE Transactions on Industrial Informatics (2017)

#### Conferences and workshops

- 2020... – Program Committee and reviewer at the International Workshop on Robotics Software Engineering (RoSE)
- 2016... – Int. Conf. on Robotics and Automation (IROS)  
Editor in 2020
- 2019... – Int. Conf. on Intelligent Robots and Systems (ICRA)
- 2008 – Int. Conf. International Federation of Automatic Control (IFAC)
- 2018, 2019 – Reviewer WAISE
- 2019 – Reviewer MORSE
- 2017, 2019 – Reviewer ROBOT Iberian Conference on Robotics
- 2018 – Reviewer RSS
- 2019 – Reviewer ECMFA
- 2018 – Reviewer ARSO
- 2010 – Brain Inspired Cognitive Systems Conference

### **Memberships Of Scientific Societies**

- 2018 - 2022 Member Institute of Electrical and Electronics Engineers (IEEE)
- 2018 - 2022 Member IEEE Robotics & Automation Society (RAS)
- 2007 - 2012 Member Eucognition network

# My research group and supervised students

## Research group's composition

I have established the **Knowledge-driven Autonomous Systems group**, within the unit Robot Dynamics at the Cognitive Robotics Department.

## Current members

- Carlos Hernandez Corbato (Head, Assistant Professor)
- Corrado pezzato (PhD) Sep 2019-2023 (PhD defense Jan 9<sup>th</sup> 2024)
- Gustavo Rezende (PhD) July 2021-...
- Elvin Alverts (joint PhD with VU) May 2022-...
- Eugenio Tamassia (PhD) Dec 2022-...
- Forough Zamani (PhD) Mar 2022-...
- Alex Gabriel (postdoc) Jan 2023-...
- Burak Sisman (postdoc) Sep 2023-...

## External members

- Juliane Passler (PhD candidate Univ. Oslo) July 2021-...
- Tim Djedilbaev (PhD candidate G. Langejans at MSI) Dec 2022-...
- Alex Peixe (Research Engineer in METATOOL project) May 2023-...

## Former members

Dec'20 – Dec'22 Pierre Mercuriali, ROCA project  
Oct'19 – Oct'21 Mario Garzon Oviedo, ROSIN and MROS projects  
Dec'19 – Sep'21 Darko Bozhinoski, MROS project

**Supervision of Master Students at TU Delft:** 16 students graduated (4 *cum laude*)

Sep'23 Wissam jabber  
[Failure Recovery with Ontologically Generated Behaviour Trees](#)

Jun'23 Bas van Vliet (*cum laude*)  
[Autonomous Underwater Docking: Towards vertical docking of an autonomous underwater vehicle to an unmanned surface vehicle in rough seas](#)

Mar'23 Jeroen Zwanepol  
[Architecture and Task Plan Co-Adaptation with Metaplan for Unmanned Underwater Vehicles](#)

Mar'23 Ke Xu  
[Iris - A knowledge Graph-based chatbot for Explaining Robotic Scenario Information to Human Operators in a Retail Setting](#)

Mar'23 Stan Zwinkels  
[Task-specific object grasps using primitive shapes and symbolic reasoning](#)

Jul'22 Mohammed Mâachou  
[Knowledge-based Approach for Mobile Manipulation with Active Inference](#)

Aug'21 van Tilburg, Floris  
[Using Retinanet to determine local graspability for a suction actuator](#)

Jun'21 van der Sar, Martijn  
[Zero-shot learning in pick-and-place tasks using neuro-symbolic concept learning](#)

Dec'20 Helsloot, Arthur (*cum laude*)  
[Symbolic reasoning about unseen objects from multimodal sensory feedback for manipulation](#)

- Nov'20 Palande, Shreyash  
[Situation-Aware Self-Adaptive Localisation Framework: A Knowledge Representation and Reasoning approach](#)
- Nov'20 Wijkhuizen, Jasper  
[Improving safety and performance for mobile robot navigation using self-adaptation in retail environments](#)
- Oct'20 Bonhof, Stefan (*cum laude*)  
[Classifying Retail Store Cabinets with Missing or Misplaced Products Using Verification Learning](#)
- Mar'20 van Schooten, Karin  
[Reasoning for Improved Capacity in Robotic Pick-and-Place Tasks](#)
- Aug'19 Pezzato, Corrado (*cum laude*)  
[Active inference for adaptive and fault tolerant control: An application to robot manipulators](#)
- Sep'18 Sutsunava, Nick  
[Generative CoLearn: steering and cost prediction with generative adversarial nets in kinodynamic RRT](#)
- Nov'18 Cibiach Mercade, Arnau  
[Robot manipulator control under the Active Inference framework](#)

### **Past supervision of students**

2007 – 2012 Daily supervisor of: 8 MSc students

Escuela Tecnica Superior de Ingenieros Industriales, Universidad Politecnica de Madrid, Spain

## Projects

*PROJECT FUNDS AWARDED*

*TOTAL: €2,245,615*

### CoreSense: (2022-2026) - PI<sup>1</sup>

#### **A Hybrid Cognitive Architecture for Deep Understanding**

*Funding:* European Comision Horizon Europe 2020

Budget TUD: €1,004,850

*Partners:* Universidad Politécnica de Madrid (Spain), Technische Universiteit Delft (Netherlands), Fraunhofer IPA (Germany), Universidad Rey Juan Carlos (Spain), PAL Robotics (Spain), and Irish Manufacturing Research (Ireland)

### METATOOL (2022-2026) – co-PI

#### **A metapredictive model of synthetic awareness for enabling tool invention**

*Funding:* European Comision Horizon Europe 2020,

Budget TUD: €790,145

*Partners:* Universidad Politécnica de Madrid (Spain), Technische Universiteit Delft (Netherlands), Donders Institute (Netherlands), Humboldt-Universität zu Berlin (Germany), University of Sussex (UK), PAL Robotics (Spain), and Senta B.V. (Netherlands)

### REMARO: Reliable AI for marine Robotics (2021-2023) - PI

*Funding:* European Comision H2020

Budget TUD: €265,619.88

*Partners:* IT University of Copenhagen, Aarhus University , University of Bremen, German Research Center for Artificial Intelligence, RWTH Aachen University, University of Oslo, TU Delft, University of Porto, EIVA A/S, ROSEn Group, Ocean Scan MST

### ROCA: Robotics, Cognition and Archeology (2020-2021) - PI

*Funding:* Cohesion project at 3mE

Budget TUD: €60,000

*Partners:* Geeske Langejans (MSE), Carlos Hernandez (CoR)

### MROS: Metacontrol for ROS2 Systems (2019-2020) - Coordinator

*Funding:* European Comision H2020, cascade funding

Budget TUD: €100,000

*Partners:* TU Delft (Coord.), Bosch, Universidad Rey Juan Carlos, Universidad Politecnica de Madrid, ITU Copenhagen

### MOOC: Robotics with ROS (2018) – co-PI

*Funding:* TU Delft Extension School, €25,000

## PROJECTS COORDINATED<sup>2</sup>

### ROSIN (2017-2020) – PI, Co-Coordinator

#### **ROS-Industrial quality-assured robot software components**

*Funding:* European Comision H2020. *Partners:* TU Delft, Fraunhofer IPA, ITU Copenhagen, Tecnalia, FH Aachen

### Factory-in-a-day (2015-2017) – Co-Coordinator

*Funding:* European Comision FP7.

*Partners:* TU Delft (Coord.), KU Leuven, Materialise NV, Universal Robots AS, Siemens Industry Software, CNRS-LAAS, Fraunhofer IPT, Fraunhofer IPA, TU Munich, Randstad Netherland BV, Philips, Factory Control, PAL Robotics, Delft Robotics, EMP Tooling

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<sup>1</sup> PI: Principal Investigator

<sup>2</sup> I was not responsible for the funding acquisition

Previous Experience in International Scientific Projects

**Humanoids that Learn Socio-Communicative Skills by Observation (2009-2012)**

*Funding:* European Comision FP7. *Partners:* Reykjavik University (Coord.), Universidad Politecnica De Madrid, Universita Degli Studi Di Palermo, Consiglio Nazionale Delle Ricerche, Communicative Machines Limited

Role: researcher

**Integrating Cognition, Emotion and Autonomy (2006-2009)**

*Funding:* European Comision FP7. *Partners:* Hogskolan I Skovde, Bae Systems (Operations) Limited, Centre National De La Recherche Scientifique, Consiglio Nazionale Delle Ricerche, Cyberbotics Sarl, Mta Kfki Reszecske- Es Magfizikai Kutatointezet, The University of Sheffield, Universidad Politecnica De Madrid, Universite Paris Vi Pierre Et Marie Curie, University Of The West Of England, Bristol

Role: researcher

## **Contributions to the Mechanical Engineering Faculty**

### ***Education***

- Initiator and instructor in the first MOOC at ME: *Hello (real) world with the Robot Operating System*
- Responsible instructor - *Knowledge Representation and Reasoning*, elective course in the program MSc Robotics
- Coordinator and Instructor – *Multidisciplinary Project*, mandatory course in the program MSc Robotics
- Supervisor of bachelor End Projects (every other semester)

### ***Organisation***

- Member of the Board of Studies of the Program MSc Robotics from 2021 to 2023
- Member of the Focus Areas for Mechanical Engineering (FAME)



# Publications

## Selected publications

- Pezzato, C., **Hernandez, C.**, and Wisse, M. “Active Inference and Behavior Trees for Reactive Action Planning and Execution in Robotics”. *IEEE Transactions on Robotics*, 2023

This is the first important journal paper of my first PhD, which reflects his independent approach to tackle our shared problem of designing more adaptive robot control architectures.

- D. Bozhinoski, M. G. Oviedo, N. H. Garcia, H. Deshpande, G. van der Hoorn, J. Tjerngren, A. Wasowski, and **C. H. Corbato**. “MROS: runtime adaptation for robot control architectures”. *Advanced Robotics*, 0(0):1– 17, 2022.

This journal paper reflects the consolidation of my main research line, called Metacontrol, including most of the international collaborators that contributed to develop it from a concept idea into a framework backed up by systematic experiments and software to further develop it.

- Fernandez, J. L., & **Hernandez, C.** (2019). *Practical Model-Based Systems Engineering*. (Artech House Technology Management and Professional Development Series). Artech House. [link](#)

This book reflects my expertise on systems engineering.

- **Hernandez Corbato, C.**, Bharatheesha, M., van Egmond, J., Ju, J., & Wisse, M. (2018). Integrating different levels of automation: Lessons from winning the Amazon Robotics Challenge 2016. *IEEE Transactions on Industrial Informatics*, 14(11), 4916-4926. <https://doi.org/10.1109/TII.2018.2800744>

This is the journal paper that contributes a systematic analysis of the robot control architecture of the

- **Hernández, C.**, Bermejo-Alonso, J., & Sanz, R. (2018). A self-adaptation framework based on functional knowledge for augmented autonomy in robots. *Integrated Computer-Aided Engineering*, 25(2), 157-172. <https://doi.org/10.3233/ICA-180565>

This journal paper contains my seminal work on Metacontrol that initiated its development as an independent research line.

## Complete list of publications

### Books

- Fernandez, J. L., & **Hernandez, C.** (2019). *Practical Model-Based Systems Engineering*. (Artech House Technology Management and Professional Development Series). Artech House. [link](#)

### Book chapters

- Sanz, R., **Hernández, C.**, & Gómez-Ramírez, J. (2011). From brains to the machines of the future. In *From Brains to Systems: Brain-Inspired Cognitive Systems 2010* (Vol. 718, pp. 1-6). (Advances in Experimental Medicine and Biology; Vol. 718). [https://doi.org/10.1007/978-1-4614-0164-3\\_1](https://doi.org/10.1007/978-1-4614-0164-3_1)
- Sanz, R., Gómez Rivas, J., Hernández, C., & Alarcón, I. (2008). Thinking with the Body: Towards Hierarchical, Scalable Cognition. In P. Calvo, & A. Gomila (Eds.), *Handbook of Cognitive Science* (pp. 395-421). Elsevier. <https://doi.org/10.1016/B978-0-08-046616-3.00020-7>

### Journal Publications

- Pezzato, C., Salmi, C., Spahn, M., Trevisan, E., Alonso-Mora, J., & **Corbato, C. H.** (2023). “Sampling-based Model Predictive Control Leveraging Parallelizable Physics Simulations”. Under review IEEE RA-L
- Pezzato, C., **Hernandez, C.**, and Wisse, M. “Active Inference and Behavior Trees for Reactive Action Planning and Execution in Robotics”. *IEEE Transactions on Robotics*, 2023

- D. Bozhinoski, M. G. Oviedo, N. H. Garcia, H. Deshpande, G. van der Hoorn, J. Tjerngren, A. Wasowski, and **C. H. Corbato**. “MROS: runtime adaptation for robot control architectures”. *Advanced Robotics*, 0(0):1– 17, 2022.
- Aguado, E., Milosevic, Z., **Hernández, C.**, Sanz, R., Garzon, M., Bozhinoski, D., & Rossi, C. (2021). Functional self-awareness and metacontrol for underwater robot autonomy. *Sensors (Switzerland)*, 21(4), [1210]. <https://doi.org/10.3390/s21041210>
- Pezzato, C., Ferrari, R. M. G., & **Hernández, C.** (2020). A Novel Adaptive Controller for Robot Manipulators Based on Active Inference. *IEEE Robotics and Automation Letters*, 5(2), 2973-2980. <https://doi.org/10.1109/LRA.2020.2974451>
- **Hernandez Corbato, C.**, Bharatheesha, M., van Egmond, J., Ju, J., & Wisse, M. (2018). Integrating different levels of automation: Lessons from winning the Amazon Robotics Challenge 2016. *IEEE Transactions on Industrial Informatics*, 14(11), 4916-4926. <https://doi.org/10.1109/TII.2018.2800744>
- **Hernández, C.**, Bermejo-Alonso, J., & Sanz, R. (2018). A self-adaptation framework based on functional knowledge for augmented autonomy in robots. *Integrated Computer-Aided Engineering*, 25(2), 157-172. <https://doi.org/10.3233/ICA-180565>
- Thórisson, K. R., Nivel, E., Steunebrink, B. R., Helgason, H. P., Pezzulo, G., Sanz, R., Schmidhuber, J., Dindo, H., Rodriguez, M., Chella, A., Jonsson, G. K., Ognibene, D., & **Hernandez, C.** (2014). Autonomous Acquisition of Natural Situated Communication. *IADIS International Journal on Computer Science and Information Systems*, 9(2), 115-131.
- Sanz, R., **Hernández, C.**, & Sánchez-Escribano, M. G. (2012). Consciousness, action selection, meaning and phenomonic anticipation. *International Journal of Machine Consciousness*, 4(2), 383-399. <https://doi.org/10.1142/S1793843012400227>
- Bermejo-Alonso, J., Sanz, R., Rodriguez, M., & **Hernández, C.** (2010). An Ontological Framework for Autonomous Systems Modelling. *International Journal On Advances In Intelligent Systems*, 3(3), 211-225.
- **Hernández, C.**, López, I., & Sanz, R. (2009). The operative mind: A functional, computational and modeling approach to machine consciousness. *International Journal of Machine Consciousness*, 1(1), 83-98. <https://doi.org/10.1142/S1793843009000098>
- Sanz, R., **Hernández, C.**, Gómez-Ramirez, J., Bermejo-Alonso, J., Rodriguez, M., Hernando, A., & Sánchez-Escribano, G. (2009). System, Models and Self-Awareness: Towards Architectural Models of Consciousness. *International Journal of Machine Consciousness*, 1(2), 255-279.
- Sanz, R., **Hernández, C.**, Gómez Rivas, J., Bermejo-Alonso, J., Rodríguez, M., Hernando, A., & Sánchez-Escribano, G. (2009). Systems, models and self-awareness: Towards architectural models of consciousness. *International Journal of Machine Consciousness*, 1(2), 255-279. <https://doi.org/10.1142/S1793843009000359>
- Sanz, R., López, I., Rodríguez, M., & **Hernandez Corbato, C.** (2007). Principles for consciousness in integrated cognitive control. *Neural Networks*, 20(9), 938-946. <https://doi.org/10.1016/j.neunet.2007.09.012>

## Refereed Conference/Workshop Proceedings

- C. Pezzato, C. Salmi, E. Trevisan, J. A. Mora, and **C. H. Corbato**. Sampling-based mpc using a gpu-parallelizable physics simulator as dynamic model: an open source implementation with isaacgym. In *Embracing Contacts-Workshop at ICRA 2023*, 2023.
- G. R. Silva, J. Päßler, J. Zwanepol, E. Alberts, S. L. T. Tarifa, I. Gerostathopoulos, E. B. Johnsen, and **C. H. Corbato**. Suave: An exemplar for self-adaptive underwater vehicles. In *2023 IEEE/ACM 18th Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS)*, pages 181–187. IEEE, 2023.
- G. R. Silva, N. H. Garcia, D. Bozhinoski, H. Deshpande, M. G. Oviedo, A. Wasowski, M. R. Montero, and **C. H. Corbato**. MROS: A framework for robot self-adaptation. In *2023 IEEE/ACM 45th*

International Conference on Software Engineering: Companion Proceedings (ICSE-Companion), pages 151–155. IEEE, 2023.

- J. Päßler, E. Aguado, G. R. Silva, S. L. T. Tarifa, **C. H. Corbato**, and E. B. Johnsen. A formal model of metacontrol in maude. *Lecture Notes in Computer Science*, pages 575–596, 2022.
- Mercuriali, P., Langejans, G., **Hernandez Corbato, C.** (2021). Ontologies for tool use in primates and hominins. *International Conference in Computer Applications and Quantitative Methods in Archaeology 2021*.
- Baioumy, M., Pezzato, C., Ferrari, R., **Hernandez, C.**, and Hawes, N. (2021). “Towards Stochastic Fault-tolerant Control using Precision Learning and Active Inference”. *ECML/P- KDD 2021*
- Baioumy, M., Pezzato, C., Ferrari, R., **Hernandez, C.**, and Hawes, N. (2021). “Fault-tolerant Control of Robot Manipulators with Sensory Faults using Unbiased Active Inference”. *ECC 2021*
- Bozhinoski, D., Aguado, E., Oviedo, M. G., **Hernandez, C.**, Sanz, R., & Wasowski, A. (2021). A Modeling Tool for Reconfigurable Skills in ROS. In *Proceedings of the IEEE/ACM 3rd International Workshop on Robotics Software Engineering, RoSE 2021* (pp. 25-28). [9474550] IEEE . <https://doi.org/10.1109/RoSE52553.2021.00011>
- Pezzato, C., Baioumy, M., **Hernandez, C. H.**, Hawes, N., Wisse, M., & Ferrari, R. (2020). Active inference for fault tolerant control of robot manipulators with sensory faults. In T. Verbelen, P. Lanillos, C. L. Buckley, & C. De Boom (Eds.), *Active Inference: Proceedings of the First International Workshop, IWAI 2020* (pp. 20-27). (Communications in Computer and Information Science; Vol. 1326). Springer. [https://doi.org/10.1007/978-3-030-64919-7\\_3](https://doi.org/10.1007/978-3-030-64919-7_3)
- **Hernandez Corbato, C.**, Milosevic, Z., Olivares, C., Rodriguez, G., & Rossi, C. (2019). Meta-control and Self-Awareness for the UX-1 Autonomous Underwater Robot. In M. F. Silva, J. Luís Lima, L. P. Reis, A. Sanfeliu, & D. Tardioli (Eds.), *Robot 2019: 4th Iberian Robotics Conference - Advances in Robotics* (pp. 404-415). (Advances in Intelligent Systems and Computing; Vol. 1092 AISC). Springer. [https://doi.org/10.1007/978-3-030-35990-4\\_33](https://doi.org/10.1007/978-3-030-35990-4_33)
- Bharatheesha, M., **Hernandez, C.**, Wisse, M., Giftsun, N., & Dumonteil, G. (2017). *Dynamic obstacle avoidance for collaborative robot applications*. 2017 IEEE International Conference on Robotics and Automation, ICRA 2017, Singapore, Singapore.
- **Hernandez, C.**, & Fernandez-Sanchez, J. L. (2017). Model-based systems engineering to design collaborative robotics applications. In B. Rassa, & P. Carbone (Eds.), *Proceedings of the 2017 IEEE International Symposium on Systems Engineering (ISSE 2017)* IEEE . <https://doi.org/10.1109/SysEng.2017.8088258>
- **Hernandez Corbato, C.**, Bharatheesha, M., Ko, W., Gaiser, H., Tan, J., van Deurzen, K., de Vries, M., Van Mil, B., van Egmond, J., Burger, R., Morariu, M., Ju, J., Gerrmann, X., Ensing, R., Van Frankenhuyzen, J., & Wisse, M. (2017). Team Delft’s robot winner of the Amazon Picking Challenge 2016. In S. Behnke, R. Sheh, S. Sarel, & DD. Lee (Eds.), *RoboCup 2016: Robot World Cup XX* (pp. 613-624). (Lecture Notes in Computer Science (Subserie Lecture Notes in Artificial Intelligence); Vol. 9776 ). Springer. [https://doi.org/10.1007/978-3-319-68792-6\\_51](https://doi.org/10.1007/978-3-319-68792-6_51)
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