
CONTACT INFORMATION	 mihai@andries.eu  mihai.andries@imt-atlantique.fr  http://mihai.andries.eu	 LinkedIn profile  Google Scholar profile
RESEARCH INTERESTS	Machine learning, Cognitive robotics, Cognitive architectures, Autonomous intelligent systems, Ambient intelligence, Automated design, Simulation.	
EDUCATION	<p>Ph.D. in Computer Science, Artificial Intelligence Oct 2012 – Dec 2015 Thesis: <i>Object and human tracking, and robot control through a load sensing floor</i> Université de Lorraine, Nancy, France</p> <p>Master in Computer Science Sept 2010 – Sept 2012 Software and Information Engineering Thesis: <i>Distributed algorithms for multi-robot exploration of structured environments.</i> Université de Strasbourg, Strasbourg, France</p> <p>Licence (B.Sc.) in Computer Science Sept 2007 – June 2010 Université de Strasbourg, Strasbourg, France</p>	
PROFESSIONAL EXPERIENCE	<p>Associate professor in Computer Science Dec 2020 – present Ambient Systems and Cognitive Robotics IMT Atlantique, Brest, France</p> <p>Research engineer, 3D & Machine learning Aug 2020 – Nov 2020 Dassault Systèmes (3DS), Vélizy-Villacoublay, France</p> <p>Postdoctoral researcher May 2019 – April 2020 Inria — French National Institute for Research in Computer Science and Automation LARSEN team, Nancy, France Advisor: Serena Ivaldi, Chargée de recherche</p> <ul style="list-style-type: none"> • Automatic generation of a dataset of 3D object models to evaluate and train robotic grasping algorithms using generative Deep Learning models (HEAP project). • Supervision of a PhD student working on integration of human preference into robotic grasping. • Tools: Python, Jupyter Notebook, TensorFlow, DexNet, BinVox, TriMesh, V-HACD, MAP-Elites, Matplotlib, SolidWorks, CURA (3D printing), G-code. <p>Postdoctoral researcher Apr 2017 – Apr 2019 Institute for Systems and Robotics (ISR-Lisboa) Instituto Superior Técnico (IST), Universidade de Lisboa, Lisbon, Portugal Advisor: José Santos-Victor, Full Professor (IST)</p> <ul style="list-style-type: none"> • Automatic generation of 3D object models satisfying functional requirements using generative Deep Learning models. • Testing object affordances in simulation. • Autonomous learning of object affordances for cognitive robotics. • Drafting national (FCT) and European (H2020) research project proposals. • Supervising a Master student working on affordance testing. • Tools: Python, TensorFlow, Gazebo, BinVox, TriMesh, ROS, Baxter robot, iCub robot, LaTeX. <p>Founder Mar 2017 – present Andries Labs S.R.L., Chişinău, Moldova</p> <ul style="list-style-type: none"> • Development of jurnyz.com, a traveller-oriented website for logging journeys. • Tools: HTML, CSS, Javascript, PHP, SQL, D3JS, GeoJSON, AJAX, REST. 	

Postdoctoral researcher**Jan–Dec 2016**

CNRS, Institute for Intelligent Systems and Robotics (ISIR)
 Université Pierre-et-Marie-Curie (Paris VI), Paris, France
 Advisor: Raja Chatila, Directeur de recherche (CNRS)

Project: *RoboErgoSum*, French National Research Agency (ANR)

- Research on cognitive architectures for perception, learning, reasoning and action planning.
- Research on perception and knowledge grounding in robotics.
- Supervision of a PhD student working on Planning in Artificial Intelligence.
- Tools: C++, ROS, R, Baxter robot.

Project: *Spencer*, European Research Project, Cognitive Systems and Robotics

- Group detection in densely populated environments for social robotics.
- Tools: C++, ROS, MATLAB.

Doctoral Researcher**Oct 2012 – Dec 2015**

Inria — French National Institute for Research in Computer Science and Automation
 Autonomous intelligent machines (MAIA) and LARSEN teams, Nancy, France
 Thesis: *Object and human tracking, and robot control through a load sensing floor*
 Advisors: François Charpillet, Directeur de recherche (Inria)
 Olivier Simonin, Professor of Computer Science (INSA Lyon, France)

- Ambient intelligence applied to healthcare (elderly care), involving a distributed load sensor located under a floor.
- Detection, recognition and tracking of humans and objects in the environment using a load-sensing floor.
- Robotic navigation in environments with ground pressure sensors.
- Tools: Java, ROS, gnuplot.

Research Intern**Feb 2012 – July 2012**

Inria, Autonomous intelligent machines team (MAIA), Nancy, France
 Supervisor: François Charpillet, Directeur de recherche (Inria)

Project: *Cartography of a territory by a robot (CAROTTE)*, national joint project of the French National Research Agency (ANR) and the French General Directorate for Armament (DGA)

- Research and development of multi-agent exploration algorithms for robotic search-and-rescue missions.
- Tools: Java, gnuplot.

Software R&D Intern**Sept 2010 – Jan 2012**

PSA Peugeot Citroën
 Telematics Architecture and Software Specification team, Sochaux, France

- Development of a methodology for designing UML/SysML models of software architectures for vehicles.
- Implemented networking functionalities for a Controller Area Network (CAN) driver, for connecting real and simulated car components.
- Tools: C, UML/SysML, Sparx Enterprise Architect, Atego Artisan Studio, IBM Rational Rhapsody, Qt, Agile development, Scrum.

TEACHING
 EXPERIENCE

Associate Professor at IMT Atlantique**Dec 2020 – present**

Courses: Databases, Methods for Object Oriented Programming, Web development, Robotics (section on Manipulation).

Qualification Maître de Conférences (France)**Feb 2017 – Dec 2021**

Section 27 - Computer Science

Teaching assistant at TELECOM Nancy**Oct 2012 – Sep 2014**

Courses: Techniques and Tools for Programming, Compilation, Graphs and Operational Research, Artificial Intelligence.

ADMINISTRATIVE EXPERIENCE	<p>Organiser of the Journal Club Mar–Dec 2016 weekly sessions for presenting and discussing scientific publications in the Institute for Intelligent Systems and Robotics (ISIR) laboratory (Paris, France)</p> <p>Elected representative Mar–Dec 2015 of doctoral researchers, post-docs, contract engineers and contract researchers in the LORIA laboratory council (Nancy, France)</p> <p>Appointed representative Jan–Dec 2015 of doctoral researchers, post-docs, contract engineers and contract researchers in the council of the Inria Nancy research center (Nancy, France)</p>
VOLUNTEERING EXPERIENCE	<p>Communication officer Apr 2017 – Sep 2021 MentorMe mentorship programme for Moldovan high-school graduates and undergraduate university students seeking to pursue their university education abroad.</p> <p>Programme manager Mar 2016 – Mar 2017 MentorMe mentorship programme</p> <ul style="list-style-type: none"> • Drafting the specification for the MentorMe online platform • Fundraising: jointly preparing and submitting grant proposals to national funding organisms (e.g. Biroul Relații cu Diaspora) • Community management: processing join/leave requests from members • Activity reporting to the founder of the mentorship programme • Team management (3 volunteers: operations, communication, fundraising) <p>Software developer Aug 2010 On-line dictionary of library science terminology Designed and developed the software for an on-line dictionary of library science terminology for the National Library of the Republic of Moldova</p>
SOFTWARE SKILLS	<p>Programming languages: Python, Java, C, C++, OCaml, Pascal, assembly Scientific software: L^AT_EX, gnuplot, Maple, MPI, CUDA Machine Learning software: TensorFlow, Octave, Jupyter Notebook Robotics software: ROS, YARP Software Architecture: UML, SysML, Sparx Enterprise Architect, Atego Artisan Studio, IBM Rational Rhapsody, Qt Software Verification: Coq theorem prover, Frama-C Compilation: Lex, Yacc, ANTLR Databases: Relational databases (SQL, MariaDB), Graph Databases (Cypher, Neo4j) Web Development: HTML, CSS, JavaScript, PHP Computer-Aided Design: SolidWorks, CURA, G-code</p>
LANGUAGE SKILLS	<p>English: fluent (IELTS overall band score: 8/9, September 2011) French: fluent (DALF C1, 2006) Romanian: native speaker Russian: native speaker Italian: intermediate German: beginner Portuguese: beginner</p>
STUDENT SUPERVISION	<p>PhD students</p> <ul style="list-style-type: none"> • Papa Séga Wade: supervision on speech recognition (2021.10–present) Co-supervised with Ioannis Kanellos, Thierry Moudenc at IMT Atlantique • Yoann Fleytoux: informal supervision on robotic grasping (2019.05–2020.04) Supervised by Serena Ivaldi at Université de Lorraine • Raphaël Gottstein: informal supervision on planning in robotics (2016.04–10) Supervised by Raja Chatila at Université Paris VI

Master students

- Rui Maia: *Testing object affordances in Gazebo simulator* (2019.03–07)
Co-supervised with Atabak Dehban at Instituto Superior Técnico

Master group projects

- *Reconnaissance de l'activité de vie quotidienne humaine à domicile à l'aide du son*
Students: Mateo BENTURA LARREGUI, Ezequiel Tomas CENTOFANTI, Kevin MICHALEWICZ, Oumaima TOUIL
Co-supervised with Christophe Lohr at IMT Atlantique (2021.10–2022.03)
- *Système d'information géographique d'aide au diagnostic de faisabilité d'un projet immobilier et de construction*
Students: Benjamin DEMOLIN, Thierry JIAO, Kristof SZENTES, Yin TAN
Co-supervised with Cécile Bothorel at IMT Atlantique (2021.10–2022.03)

Bachelor group projects

- *Application web pour faire un inventaire de déménagement*
Students: Aline ARENS, Maëlys CHEVRIER, Maxime MERLE, Yuhua XIN
Supervised at IMT Atlantique (2021.01–06)
- *Flex Office Manager, gestion des bureaux dans le cadre d'une organisation de bureau flexible et du télétravail*
Students: Dimitri BESTARD, Matys ELIAYAN, Maud LAFOY
Co-supervised with Charlotte Langlais and Annabelle Boutet-Diéye at IMT Atlantique (2021.01–06)

PHD THESIS

- [1] *Object and human tracking, and robot control through a load sensing floor*
Mihai Andries, Ph.D. thesis, Université de Lorraine (2015)

WORK IN PROGRESS

- [2] Object affordance evaluation library
Mihai Andries
- [3] Acoustic-based fluency classification using LSTM-Attention with computationally-cheap data augmentation for an adaptive voicebot
Papa Séga Wade, Mihai Andries, Ioannis Kanellos, Thierry Moudenc
- [4] AGOD-Grasp: An automatically generated object dataset for benchmarking and training robotic grasping algorithms
Mihai Andries, Yoann Fleytoux, Jean-Baptiste Mouret, Serena Ivaldi
(pre-print)

REFEREED JOURNAL PUBLICATIONS

- [5] Automatic generation of object shapes with desired affordances using voxelgrid representation
Mihai Andries, Atabak Dehban, José Santos-Victor
Frontiers in Neurorobotics, 2020
- [6] Toward Self-Aware Robots
Raja Chatila, Erwan Renaudo, Mihai Andries, Ricardo Omar Chavez-Garcia, Pierre Luce-Vayrac, Raphaël Gottstein, Rachid Alami, Aurélie Clodic, Sandra Devin, Benoît Girard, Mehdi Khamassi
Frontiers in Robotics and AI, 2018
- [7] Affordance equivalences in robotics: a formalism
Mihai Andries, Ricardo Omar Chavez-Garcia, Raja Chatila, Alessandro Giusti, Luca M. Gambardella
Frontiers in Neurorobotics, 2018
- [8] Localisation of humans, objects and robots interacting on load-sensing floors
Mihai Andries, François Charpillet, Olivier Simonin
IEEE Sensors Journal, 2016

CONFERENCE PUBLICATIONS

- [9] Discovering and Manipulating Affordances
Ricardo Omar Chavez-Garcia, Mihai Andries, Pierre Luce-Vayrac, Raja Chatila
International Symposium on Experimental Robotics (ISER 2016)

- [10] Modeling the dynamics of individual behaviors for group detection in dynamic crowds using low-level features
Omar Adair Islas Ramírez, Giovanna Varni, Mihai Andries, Mohamed Chetouani, Raja Chatila
IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN 2016)
* Best paper nominee, Technical Category
- [11] Probabilistic sensor data processing for robot localisation on load-sensing floors
Maxime Rio, Francis Colas, Mihai Andries, François Charpillet
Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (ICRA 2016)
- [12] Multi-robot taboo-list exploration of unknown structured environments
Mihai Andries, François Charpillet
Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2015)
- [13] High resolution pressure sensing using sub-pixel shifts on low resolution load-sensing tiles
Mihai Andries, François Charpillet, Olivier Simonin
Proceedings of IEEE International Conference on Robotics and Automation (ICRA 2015)
- [14] Multi-robot exploration of unknown environments with identification of exploration completion and post-exploration rendez-vous using ant algorithms
Mihai Andries, François Charpillet
Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2013)
- WORKSHOP PUBLICATIONS
- [15] Generating object shapes with desired affordances
Mihai Andries, Atabak Dehban, José Santos-Victor
2nd International Workshop on Computational Models of Affordance in Robotics (at ICRA 2019)
- [16] From Perception and Manipulation to Affordance Formalization
Ricardo Omar Chavez-Garcia, Mihai Andries, Pierre Luce-Vayrac, Raja Chatila
Workshop on Machine Learning Methods for High-Level Cognitive Capabilities in Robotics (ML-HLCR at IROS 2016)
- [17] High resolution pressure sensing using sub-pixel shifts on low resolution load-sensing tiles
Mihai Andries, François Charpillet, Olivier Simonin
Workshop "Get in touch!" Tactile & force sensing for autonomous, compliant, intelligent robots (at ICRA 2015)

SCIENTIFIC PRESENTATIONS

- IMT Atlantique Séminaire Recherche
Nantes, France, 9–10 November 2021
Topic: *Diagnostic continuuel de l'état de santé physique et mentale à domicile*
- Dassault Systèmes
Vélizy-Villacoublay, France, 25 March 2020
Topic: *Automatic generation of object shapes with desired affordances using voxelgrid representation*
- HEAP project meeting, University of Lincoln
Lincoln, England, United Kingdom, 21 November 2019
Topic: *Generated dataset of object models for evaluating robotic grasping abilities*
- University of Plymouth
Plymouth, England, United Kingdom, 26 February 2019
Topic: *Automatic generation of object shapes with desired functionalities*

- **Ciência 2018** — Science and Technology Summit in Portugal
Lisbon Congress Center, Lisbon, Portugal, 2-4 July 2018
Poster: *Automatic generation of object shapes with desired functionalities*
- Associate Laboratory of Robotics and Engineering Systems (LARSyS) seminar
Pavilhão do conhecimento, Lisbon, Portugal, 14-15 June 2018
Topic: *Automatic generation of object shapes with desired functionalities*
- Instituto de Sistemas e Robótica, Instituto Superior Técnico
Lisbon, Portugal, 19 December 2016
Topic: *Affordance learning for knowledge grounding*
- Personally Assisted Living workshop (2014)
Inria Bordeaux Sud-Ouest, Bordeaux, France, 9–10 July 2014
Topic: *Detection, tracking and recognition of objects using a load-sensing floor*
- Personally Assisted Living workshop (2013)
Inria Rennes - Bretagne Atlantique, Rennes, France, 10–12 July 2013
Topic: *Contribution à l'évaluation de la fragilité chez la personne âgée par un système de dalles intelligentes et un réseau de cameras Kinect* (presented together with Abdallah Dib)
- University of Freiburg, Freiburg im Breisgau, Germany, 4 May 2012
Autonomous Intelligent Systems laboratory
Topic: *Coverage of an unknown structured environment by a set of robots: from ants to frontier-exploration methods*

DISSEMINATION OF
SCIENTIFIC
KNOWLEDGE

- **MentorMe Lab panel discussion on Machine Learning** (in Romanian)
Viewed by 2830 people on Facebook as of 17 April 2020
Published live on 04 April 2020
- **MentorMe interview** about my education, career path, and research in cognitive robotics (in Romanian)
Viewed by 2500 people on Facebook as of 17 April 2020
Published on 24 January 2019
- **Renaissance Nancy**
Scientific vulgarisation event organised by the municipal administration
Represented the MAIA research team at its exhibition stand (3 days)
Nancy, France, May 2013

WINTER AND
SUMMER SCHOOLS
ATTENDED

- **International Winter School on Humanoid Robot Programming**
(6–15 February 2018, Santa Margherita Ligure, Genoa, Italy)
- **Summer School on Law and Logic** (13–18 July 2015, Florence, Italy)
- **Global Young Scientists Summit** (18–23 January 2015, Singapore)
- **Advanced Course on Artificial Intelligence (ACAI 2011)**: summer school on Automated Planning and Scheduling (7–10 June 2011, Freiburg im Breisgau, Germany)

ONLINE COURSES
ATTENDED

- *Control of Mobile Robots*, online course provided by Georgia Institute of Technology on Coursera (Feb 2019)
- *Machine Learning*, online course provided by Stanford University on Coursera (Jan–Feb 2017)
- *Philosophy and the Sciences*, online course provided by the University of Edinburgh on Coursera (Oct–Dec 2014)
- *Introduction to Philosophy*, online course provided by the University of Edinburgh on Coursera (Jan–Mar 2013)
- *Introduction to Artificial Intelligence (advanced track)*, online course given by Prof. Sebastian Thrun and Prof. Peter Norvig (Oct–Dec 2011)

PROFESSIONAL
SERVICE

Workshop organisation

- Object Recognition and Manipulation (ORMR) CHIST-ERA Joint Workshop International Conference on Computer Vision Systems (ICVS 2021)
Co-organised with Markus Vincze, Andrea Cavallaro, Berk Calli, Krystian Mikolajczyk (24 September 2021)
- Perception and Modelling for Manipulation of Objects (PaMMO) workshop International Conference on Pattern Recognition (ICPR) 2020
Co-organised with Markus Vincze, Andrea Cavallaro, Berk Calli, Krystian Mikolajczyk (10 January 2021)

Editing for scientific journals

- MDPI Applied Sciences: Special Issue on "Design, Optimization and Performance Analysis of Cognitive Robotics"
Senior-editors: Plinio Moreno, Alexandre Bernardino (2021.09–2022.03)

Reviewing for research funding institutions

- Agence Nationale de la Recherche (France)
Reviewed for ANR in 2017, 2023

Reviewing for scientific journals

- Adaptive Behavior (2018, 2019)
- Autonomous Robotics (2017)
- Frontiers in Robotics and AI (2020)
- IEEE Robotics and Automation Letters (2020)
- IEEE Transactions on Robotics (2015, 2017)
- MDPI Energy (2022)
- MDPI IoT (2022)
- MDPI Mathematics (2021)
- MDPI Robotics (2020)
- MDPI Systems (2020)
- Robotics and Autonomous Systems (2014)
- Sensors & Actuators (2018)
- Springer AI Perspectives: Human-centered AI (2021)

Reviewing for scientific conferences

- IEEE International Conference on Robotics and Automation (ICRA)
Reviewed for ICRA 2017, 2018, 2021, 2023
- IEEE/RSJ International Conference on Intelligent Robots (IROS)
Reviewed for IROS 2015, 2017, 2020, 2021
- International Symposium on Experimental Robotics (ISER)
Reviewed for ISER 2020
- International Symposium on Robot and Human Interactive Communication (RO-MAN)
Reviewed for RO-MAN 2021

Reviewing for scientific workshops

- Robotics for People: Perspectives on Interaction, Learning, and Safety (R4P2021)
Workshop organised at Robotics: Science and Systems (RSS) 2021

AWARDS AND
DISTINCTIONS

- Face the robot challenge (placed 4-28 out of 58 submissions)
Prize: 200 euro, for the entry *Browey* (in collaboration with Hugo Simão)
Organised by the Honda Research Institute Europe (2017.10.22)
- Selected to participate in the Research Opportunities Week (ROW) at the Technical University of Munich (TUM) (20-24 March 2017)
- Best Paper Nominee, Technical Category (top 5%), RO-MAN 2016
"Modeling the dynamics of individual behaviors for group detection in dynamic crowds using low-level features."
- Award for Academic Excellence for Moldavian students studying abroad (Doctorate level), Government of the Republic of Moldova (*Gala studenților originari din Republica Moldova, 2015*)
- Selected as an Inria representative for the Global Young Scientists Summit 2015 (18-23 January 2015, Singapore)

- AWARDED GRANTS
- Grant *Stratégie d'Attractivité Durable (SAD)* for the project "*Évaluation automatique continue de la capacité fonctionnelle humaine à domicile à l'aide de la vision par ordinateur*" (*ECFvisuL*) (18-month postdoctoral grant; value: 57,000€; to which 30,000€ are added from other sources; 2022.09–2024.02)
 - Grant from the French governmental program *Plan de relance*, for the Mementop project (drafted with Christophe Lohr and the company Smart Macadam) on:
 - Topic: Extracting clinical health indicators of neurodegenerative diseases from geriatric speech.
Value: 110 595€ of which 20% are covered by the host-company Smart Macadam.
Duration: 24-months; 2022.10–2024.10.
Position type: Postdoc.
 - Recognition of activities of daily living using sound (24-month postdoc; value: 110 595€ of which 20% are covered by the host-company Smart Macadam).
Funding cancelled due to unfilled position.
 - NVIDIA GPU grant: Titan Xp GPU (value: \$1200, 12 February 2018)
(together with Atabak Dehban and Prof. José Santos-Victor)
 - Fundação para a Ciência e Tecnologia (FCT) postdoctoral research grant
(Portugal, 2017.04–2019.04)
 - Inria CORDI-S doctoral research grant (France, 2012.10–2015.10)
 - ECCAI 2012 travel grant
 - IJCAI 2011 travel grant
 - ECCAI 2011 travel grant
- MEMBERSHIPS
- Member of the [IEEE Technical Committee on Cognitive Robotics](#) — IEEE Robotics and Automation Society (since May 2016)
 - French Association for Artificial Intelligence (AFIA, 2011–2015)
- INTERESTS
- Sailing
 - Travel