DARIO PASQUALI

Post Doc @ Istituto Italiano di Tecnologia

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EXPERIENCE

Post Doc - IIT
COgNiTive Architectures for Collaborative Technologies

📅 Feb 2022 – Present   📍 Genova, Italy

Proactive Memory iN AI for Development
Develop a bio-inspired cognitive architecture enabling the RB-Kairos rover (Robotnik) with context spatial awareness and working functional memory to ensure the safety of human workers in industrial enviroment. [ROS, Python]

PhD Candidate - IIT
RBCS and ICT Departments

📅 Nov 2018 – July 2022   📍 Genova, Italy

Cyber Security and Social Engineering in Human-Robot Interaction.
Machine-learning based real-time evaluation of pupillometry, heart rate and electrodermal activity to predict the compliance with Social Engineering attacks, and detect human deception in human-robot interaction with Machine Learning models. [YARP, Python, C++]

Big Data Engineer
Data Reply

📅 Oct 2017 - Nov 2018   📍 Milan and Bologna, Italy

Design and development of architectures for the management and real-time processing of Big Data in the vehicle insurance field. [Python, Scala, Spark, DevOps, Cloudera CDH]

TECHNICAL SKILLS

- Python, C++, Scala, Java, C#, C, Prolog.
- Keras, Tensorflow, PyTorch, OpenCV, YARP, Cloudera CDH, Spark, Ansible, Jenkins, ROS, YARP

PERSONAL SKILLS

- Team-working and passion toward mentoring and leadership
- Extremely curious and always eager to expand my knowledge
- Initiative-taker in problem solving and used to lateral thinking

HOBBIES

Miniature painting, Beer homebrewing, Cooking

ACHIEVEMENTS

Successfully planning my wedding and leading the renovation of my future house, while doing a PhD in a different city, during the pandemic.

EDUCATION

PhD in Bioengineering and Robotics
Istituto Italiano di Tecnologia & University of Genova

📅 Jul 2022

International Doctorate *summa cum laude*

BSc & MSc in Computer Engineering
University of Bologna

📅 Dec 2015 & Mar 2018

MSc: 110/110 *summa cum laude*
BSc: 101/110

PROJECTS

Lie Detection in HRI
- Machine Learning model to autonomously detect lies based on a real-time pupillometry-based cognitive load evaluation. Implemented on the humanoid robot iCub and tested both in a lab and in real-environments (Maker Faire Rome 2022) leveraging interactive online learning.

Social Engineering Adventure (SEA)
- Python textual adventure to challenge players against Social Engineering threats. Real-time control of the humanoid robot iCub (in C++). Multi-modal acquisition and processing of physiological data from an Eyelink 1000, a Tobii Pro Glasses 2 and a Shimmer3 GSR+, used to predict humans' compliance.

Adventurer Robot Companion (ARC)
- Evolution of the SEA project developed during a Visiting Research period at the University of Waterloo (Canada). Exploration of different intervention strategies to prevent humans' compliance using the Furhat robot.

Unreliable Treasure Hunt
- On-the-wild human-robot interaction to analyse the building and evolution of trust between a human and a robot. Participants have to find 6 eggs hidden in a room, asking hints to iCub which eventually show technical failures.

Endless Upgrade
- Master's Degree dissertation project @ Data Reply. I used DevOps principles and tools (Ansible, Terraform, Jenkins) to fully automatise the development and deployment process of a movie recommendation service in a Big Data ecosystem.

ORGANIZED EVENTS

- Pasquali, Dario et al. (July 2024). ***GROUND 2024 Workshop*** - *advancing GROup UNderstanding and robots' aDaptive behavior*. Delft, Netherlands. DOI: `https://ground-hri.github.io/workshop/`.
- – (Aug. 2023). ***GROUND 2023 Workshop*** - *advancing GROup UNderstanding and robots' aDaptive behavior*. Busan, South Corea. DOI: `https://ground-hri.github.io/workshop/1stEditionROMAN2023`.

PUBLICATIONS

📄 Journal

- Jasmin, Bernotat et al. (n.d.). "[SUBMITTED] Remember me - User-Centered Implementation and Training of Robot Working Memory for HRI in Industrial Settings". In: *Frontiers in Robotics and AI* ().
- Alexander, Aroyo M. et al. (July 2021). "Expectations Vs. Reality: Unreliability and Transparency in a Treasure Hunt Game with iCub". In: *IEEE Robot. Autom. Lett.* 6.3, pp. 5681–5688. ISSN: 23773766. DOI: `10.1109/LRA.2021.3083465`.
- **Pasquali Dario**, Gonzalez-Billandon Jonas, Aroyo Mois Alexander, et al. (Nov. 2021). "Detecting Lies is a Child (Robot)'s Play: Gaze-Based Lie Detection in HRI". in: *Int. J. Soc. Robot. 2021*, pp. 1–16. ISSN: 1875-4805. DOI: `10.1007/S12369-021-00822-5`.
- Jonas, Gonzalez-Billandon et al. (July 2019). "Can a Robot Catch You Lying? A Machine Learning System to Detect Lies During Interactions". In: *Frontiers in Robotics and AI* 6, p. 64. ISSN: 2296-9144. DOI: `10.3389/frobt.2019.00064`.

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📄 Conference Proceedings

- **Pasquali Dario**, Kothig Austin, et al. (Dec. 2023). "That's not a Good Idea: A Robot Changes Your Behavior Against Social Engineering". In: *ACM Int. Conf. Human-Agent Interaction (HAI 2023)*.
- **Pasquali Dario**, Landolfi Lorenzo, et al. (Aug. 2023). "Working Memory-Based Architecture for Human-Aware Navigation in Industrial Settings". In: *ACM/IEEE Int. Conf. Robot and Human Interactive Communication (RO-MAN 2023)*.
- **Pasquali Dario**, Rea Francesco, and Sciutti Alessandra (Nov. 2022). "Detecting Lies in the Wild: Creativity and Learning @ the Maker Faire Rome". In: *AI*IA 2022 - 1st Workshop on Artificial Intelligence and Creativity (CREAI2022)*. CEUR-WS.
- **Pasquali Dario**, Gaggero Davide, et al. (Nov. 2021). "Human vs Robot Lie Detector: Better Working as a Team?" In: *ACM/IEEE Int. Conf. on Social Robotics (ICSR)*. Springer, Cham. DOI: `10.1007/978-3-030-90525-5_14`.
- **Pasquali Dario**, Gonzalez-Billandon Jonas, Rea Francesco, et al. (Mar. 2021). "Magic iCub: A humanoid robot autonomously catching your lies in a card game". In: *ACM/IEEE Int. Conf. Human-Robot Interact.* IEEE Computer Society, pp. 293–302. ISBN: 9781450382892. DOI: `10.1145/3434073.3444682`.
- Alexander, Aroyo M. et al. (2020). "Perceived differences between on-line and real robotic failures". In: *RO-MAN 2020 - Trust. Accept. Soc. Cues Human-Robot Interact. - SCRITA*.
- **Pasquali Dario**, Aroyo Mois Alexander, et al. (Mar. 2020). "Your eyes never lie: A robot magician can tell if you are lying". In: IEEE Computer Society, pp. 392–394. ISBN: 9781450370578. DOI: `10.1145/3371382.3378253`.
- **Pasquali Dario**, M. Aroyo Alexander, et al. (Mar. 2020). "Do You See the Magic? An Autonomous Robot Magician Can Read Your Mind". In: *ACM/IEEE Int. Conf. Human-Robot Interact. Workshop on Creative Content on Social Robotics*.