Paola Ardón Ramírez

Personal Data

Address: Edinburgh, EH165XN. United Kingdom
Phone: +44 7412 652412
website: https://paolaardon.github.io
email: paola.ardon.ramirez@gmail.com / paola.ardon@ed.ac.uk

Education

- Current: Centre for Doctoral training **PhD. in Robotics and Autonomous Systems** . University of Edinburgh and Heriot-Watt University, UK. **Expected graduation date: November 2021**.
- September 2018: Centre for Doctoral training **Master of Science in Robotics and Autonomous Systems**. University of Edinburgh and Heriot-Watt University, UK. **Graduation with distinction**.
- June 2017: Advanced postgraduate program based on 3D vision and robotics **Master of Science in Computer Vision and Robotics - VIBOT Erasmus Program.** Joint Program in three different universities: University of Bourgogne - France, University of Girona - Spain, Heriot-Watt University United Kingdom. **Graduated with distinction**.
- May 2013: **Bachelor's Degree in Electrical and Computer Engineering** - minor in Business. John Brown University, Siloam Springs AR, USA. **Graduated cum laude**

Outstanding Scholarships and Awards

- August-2017: James Watt Doctoral Scholarship (GBP £ 142,000) – Based on academic performance.
- June-2015: VIBOT Erasmus Mundus Scholarship (EUR € 47,000) – Based on academic performance.
- January 2009: Walton Scholarship Program (USA $ 130,000) – Based on academic performance.
- Spring 2013: Third place in the Systems Engineering Paper for Lunabotics Mining Competition at NASA; and Second place in the Project Presentation for Lunabotics Mining Competition at NASA.

Publications

- Ardón, P.; Pairet, È.; Petrick, R.; Ramamoorthy, S.; and Lohan K. S. Learning Grasp Affordance Reasoning through Semantic Relations. IEEE Robotics and Automation Letters (RA-L). To be presented at the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). November 2019.
- Pairet, È.; Ardón, P.; Mistry, M. and Petillot, Y. Learning Generalisable Coupling Terms for Obstacle Avoidance via Low-dimensional Geometric Descriptors. IEEE Robotics and Automation Letters (RA-L). To be presented at the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). November 2019.
- Ardón, P.; Pairet, È.; Petrick, R.; Ramamoorthy, S.; and Lohan K. S. Reasoning on Grasp-Action Affordances, in Conf. Towards Autonomous Robotic Systems. July 2019. **Best Paper Award Nominee.**
- Pairet, È.; Ardón, P.; Mistry, M. and Petillot, Y. Learning and Composing Primitive Skills for Dual-arm Manipulation, in Conf. Towards Autonomous Robotic Systems. July 2019. **Advanced Robotics at Queen Mary (ARQ) best paper award.**
- Pairet,È.; Ardón, P; Liu, X.; Lopes,J.; Hastie, H.; and Lohan, K. S. A Digital Twin for Human-Robot Interaction, in ACM/IEEE Intl. Conf. on Human-Robot Interaction. March 2019.
- Ardón, P.; Pairet, È.; Ramamoorthy, S.; and Lohan, K. S. Towards robust grasps: Using the environment semantics for robotic object affordances. 2018. In AAAI Fall Symposium. Reasoning and Learning in Real-World Systems for Long-Term Autonomy. AAAI Press.

- Pairet, È.; Ardón, P.; Brox, F.; Mistry, M.; and Petillot, Y. 2018a. Learning and generalisation of primitives skills towards robust dual-arm manipulation. In AAAI Fall Symposium. Artificial Intelligence for Reasoning and Learning in Real-World Systems for Long-Term Autonomy. AAAI Press.
- Ardón, P.; Pairet, È.; Ramamoorthy, S.; and Lohan, K. S.. Object affordances by inferring on the surroundings, In Proc. IEEE Workshop on Advance Robotics and its Social Impact, 2018. In press.
- Ardón P.; Dragone, M. and Erden, M. S.Reaching and Grasping of Objects by Humanoid Robots through Visual Servoing. 6 Jun 2018 Haptics: Science, Technology, and Applications. Springer, p. 353-365 13 p. (Lecture Notes in Computer Science; vol. 10894).

Research Projects

- **Current – PhD Research on Robotic Object Affordances:** Investigate on action affordances for indoor environment objects with the purpose of improving reaching and grasp behaviours.
- **Current – ORCA Hub:** Integration and optimisation of the different robotic platforms and algorithms involved in the development of the project.
- **Spring 2018 – Master thesis on Reasoning Grasp-Action Affordances:** Design and implement a reasoning technique for object grasp-action affordances.
- **Master thesis on Visual Servoing and Grasping (Spring 2017):** Design and implement a visual servoing system on Aldebaran-Softbank platform for Peper robot to grasp objects.
- **Fall 2016 – SLAM and Object Recognition - Pepper Robot:** Group project - Implemented visual SLAM with object recognition based on ERL - service robots competition rules.
- **2015-2016 – Image Segmentation, Optimisation, localisation and path planning algorithms:** Implementation of image processing, classification and recognition algorithms (Pascal project).
- **Spring 2013 – Lunabot NASA Project**: Group project -Lunabotics Mining Competition Project (LMC) organised by NASA. Designed a fully functional prototype of a mining robot that works on the lunar environment collecting regolith. Worked on the electrical system: wireless communication, control and autonomy. Main focus on the IMU system, and autonomy software design.
- **Spring 2012 – Solar Panel Heater**: Group project - Designed the electrical system for a solar panel heater. In charge of: Solar tracking system, settings, monitoring temperature, and user interface features.

Skills

- Languages: Spanish (mother tongue) and English (high level).
- Programing languages at high level: C++, SQL and C, Python, MATLAB, NIOS II, AHDL, VHDL.
- Well handling of revision control systems (*git, cmake*); organisational frameworks, open source frameworks and cross -platforms (*Qt, openCV, Mevislab, ITK, PBRT*); robotics operative systems (*ROS, NaoqiSDK for Aldebaran*); electrical engineering software interfaces (*Quartus II*); general engineering software (*SolidWorks and Derive*). Additionally, handling of: *Linux-Ubuntu, Macintosh, Windows-Microsoft and LaTeX*.
- Digital communication systems, signal representations, modulations, and control systems.
- Extra curricular courses in the Business Administration and Organisational Leadership areas.
- Evaluate and asses situations effectively through research and compilation of information.
- Being dependable, hard working, innovative, active participation, team work and leadership skills, self motivated and committed to the job.
- Ability to create bonds towards the working group to reach personal and collective progress.

Additional Experience

- **Sep 2013-Aug 2015** – Added Value Platforms (VAP) Engineer at Tigo Honduras-Operation and Maintenance.

- **Spring 2012-Spring 2013** – Tutor and Teacher Assistant at John Brown University-Engineering Department.
- **May-term 2011 – School Year 2012-2013** – Resident Assistant at John Brown University-Student Development Department.

Volunteering Work

- Apr 2019 - current: Cancer Research UK - Edinburgh, UK.
- Aug 2017 - January 2018: First Aid Africa - UK.
- Jan 2009 - May 2013: PTA translator, Nursing home, high school tutor - USA.

References

Academic References

- *Dr. Katrin Lohan*:
  Associate Professor of School for Mathematical and Computer Sciences Heriot-Watt University
  Mail: Riccarton, Currie Edinburgh, EH144AS
  Phone: +44 (0)131 451 8338
  Email: k.lohan@hw.ac.uk
- *Dr. Robert Marti*:
  Associate Professor at the Computer Vision and Robotics Group Universitat de Girona Mail: 17071 Girona, Spain.
  Phone: +34 972 418876 / fax: +34 972 418976
  Email: robert.mart@udg.edu
- *Dr. Tim Gilmour*:
  Associate Professor of Engineering John Brown University
  Mail:2000 W University JBU Box 3513 Siloam Springs, AR 72761-2112
  Phone: +1 (479) 524 – 7319
  Email: tgilmour@jbu.edu

Professional References

- *Alejandro Servellon*:
  VAP and Rollout Engineer Tegucigalpa MDC, Honduras
  Phone: + (504) 99375464
  Email: aservellon@tigo.com.hn
- *Bryan Cole*
  Resident Director John Brown University
  Mail: 2000 W University JBU Box 3513 Siloam Springs, AR 72761-2112
  Phone: +1 (863) 398-8885
  Email: bcole@jbu.edu

Personal References

- *Prudencio Laines*
  Gerente de desarrollo de negocio. Nationale Nederlanden oficina de Girona
  Mail: Crta. Barcelona 59 E1, Girona, Spain
  Phone: +34 630-440354
  Email: plaines@nnseguros.com