Carlota Parés-Morlans

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EDUCATION

Stanford University   Stanford, CA, USA
M.Sc. in Electrical Engineering   *Sep 2021 − Jun 2023*

GPA: 4.14/4.00

Relevant coursework: Deep Learning, Computer Vision, Visual Computing Systems, Reinforcement Learning, Collaborative Robotics, Principles of Robot Autonomy

Ramon Llull University, La Salle Campus Barcelona   Barcelona, Spain
B.Sc. in Computer Engineering   *Sep 2015 − Oct 2020*

GPA: 9.87/10.0, with Honors in 38/43 courses, class **Valedictorian**

Relevant coursework: Algorithms, Machine Learning, Advanced Programming Techniques, Digital Security, System Administration

Thesis: An artificial haptic intelligence classifier that outperforms human object identification

B.Sc. in Networks and Telecommunications Engineering   *Sep 2015 − Oct 2019*

GPA: 9.85/10.0, with Honors in 36/45 courses, class **Valedictorian**

Relevant coursework: Probability, Signals & Systems, Digital Communications, Networks, Digital Systems and Microprocessors

Thesis: Proactive Threat Detector, a machine learning approach for spotting malicious domains before blacklisting

RESEARCH EXPERIENCE

IPRL Lab, Stanford University   Stanford, CA, USA
Research Assistant advised by Prof. Jeannette Bohg   *Jul 2023 − Present, Full-time*
Graduate Researcher advised by Prof. Jeannette Bohg   *Jan 2022 − Jun 2023, Part-time*

Currently working on creative physical problem solving requiring causal chaining and strategic planning. Developing a novel method that combines causal graph and policy learning.

Worked on the development of a perceptual model that proposes stable and actionable grasps for articulated objects from partial point clouds with zero-shot sim-to-real transfer.

Worked on the development of multi-class model that captures material information from ASMR videos and predicts a plausible sound that is temporally and content-wise aligned.

GTM, Ramon Llull University   Barcelona, Spain
Research Assistant advised by Prof. David Miralles   *Oct 2020 − Sep 2021, Full-time*
Undergraduate Researcher advised by Prof. David Miralles   *Jan 2018 − Sep 2020, Part-time*

Proposed a novel representation for cross-modality in object recognition tasks based on shape similarities amongst stimuli. Proved its application by passing Molyneux's test with a 90% success rate.

Developed a framework for multi-modal self-adaptation in object recognition tasks with corrupted sensors.

GRITS, Ramon Llull University   Barcelona, Spain
Undergraduate Researcher advised by Prof. Agustín Zaballos   *Jun 2017 − Jul 2019, Part-time*

Designed a monitoring architecture that takes advantage of the benefits of IoT technology to combine WSNs and DTNs.

Designed and implemented a WSN to monitor pressure, temperature, humidity, and light levels in Antarctica.

Industry Experience

Google — Mountain View, CA, USA
Student Researcher — *Jun 2022 – Sep 2022, Internship*

Developed an ML pipeline for power consumption estimation in laptops given a set of hardware components and a common user workload.

CaixaBank — Barcelona, Spain
Digital Security Intern — *Oct 2019 – Apr 2020, Part-time*

Developed a threat intelligence platform that automatically collects data from multiple sources and uses Machine Learning to effectively identify malicious domain names.

Honors and Awards

Dean's Graduate Student Advisory Council Exceptional Master's Student Award — *2023*

Recognizes students' academic excellence, intellectual achievement, and remarkable contribution to the Stanford community and beyond during their time as Master's Students at Stanford. [Link]

"La Caixa" Foundation Fellowship — *2020*

Funds 2 years of postgraduate studies ($\sim$ \$180,000). Acceptance rate of 10%. [Link]

Top 1 GPA in a 4y B.Eng in the history of La Salle Campus - Ramon Llull University — *2020*

Engineering Department Size: 850 undergraduate students.

Spain Wonnow awards winner — *2019*

Top woman in a STEM degree with the best national academic & professional background. Sponsored by Microsoft and CaixaBank (€10,000). [Link]

Catalonia University Entrance Exam Distinction — *2015*

Publications

[1] **Parés Morlans, Carlota**, C. Chen, Y. Weng, *et al.*, "AO-Grasp: Articulated object grasp generation," *arXiv preprint arXiv:2310.15928*, 2023. [Paper].

[2] D. Miralles, G. Garrofé, **Parés, Carlota**, *et al.*, "Multi-modal self-adaptation during object recognition in an artificial cognitive system," *Scientific Reports*, vol. 12, no. 1, p. 3772, 2022. [Paper].

[3] G. Garrofé, **Parés, Carlota**, A. Gutiérrez, C. Ruiz, G. Serra, and D. Miralles, "Virtual haptic system for shape recognition based on local curvatures," in *Advances in Computer Graphics: 38th Computer Graphics International Conference, CGI 2021, Virtual Event, September 6–10, 2021, Proceedings 38*, Springer, 2021, pp. 41–53. [Paper].

[4] J. Porte, A. Briones, J. M. Maso, **Pares, Carlota**, A. Zaballos, and J. L. Pijoan, "Heterogeneous wireless iot architecture for natural disaster monitorization," *EURASIP Journal on Wireless Communications and Networking*, vol. 2020, no. 1, pp. 1–27, 2020. [Paper].

[5] D. Miralles, **Parés, Carlota**, G. Garrofé, *et al.*, "Artificial haptic recognition through human manipulation of objects," in *Conference on Cognitive Computational Neuroscience*, Sep. 2019. [Paper].

Community Service and Leadership

Countrywide (Spain) STEM Awareness Talks — *2022 – Present*

Given mentoring talks to 400+ students from 20+ high schools to spread awareness of opportunities and scientific programs as well as promote STEM research.

SWIMM Mentor (Stanford Women in Math Mentoring) — *Jan 2023 – Jun 2023*

Provided guidance to an undergraduate freshman in topics like course selection, career options, and work-life balance through monthly meetings and program events. [Link]

Undergraduate Student Researcher Mentor *Jan 2021 – Jun 2021*

Mentored 2 students that joined the research lab. Helped them review papers of interest, prepared exercises to help understand research topics, and surveyed their research outcomes.

Student Representative of La Salle's Engineering department *Sep 2018 – Jul 2019*

Organized and lead quarterly meetings where I collected interests and concerns of 850+ students and formulated proposals to the Dean. Outcomes: reintroduction of the class support program and introduction of drinking fountains and recycling bins around campus.

Volunteer as support staff for Comtal Foundation (NPO) summer camp *Jul 2017*

Assisted professionals by actively participating and supervising 20 campers at program activities aimed to strengthen the skills of children at risk of social exclusion.

SKILLS

Languages: Python, Java, C, Bash, SQL, Assembly, HTML, CSS, JavaScript, MATLAB, Swift, LaTeX

Tools: Git, Linux/Unix, Docker, Google Cloud, AWS, Figma

Libraries: PyTorch, TensorFlow, ROS, NumPy, SciPy, scikit-learn, Pandas, Jupyter, Seaborn, Bootstrap