

MANUEL RODRIGUEZ LADRON DE GUEVARA

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Education

- 2018 - PhD Candidate in Computational Design
Carnegie Mellon University, School of Architecture, Pittsburgh, PA
- 2016 - 2018 Masters in Advanced Architectural Design (MAAD)
Carnegie Mellon University, School of Architecture, Pittsburgh, PA
- 2007 - 2013 Bachelor in Architecture, graduated with Honors
Barcelona School of Architecture, Polytechnic University of Catalonia

Licenses & Certificates

- 2020 Generative Adversarial Networks (GANs) Specialization
deeplearning.ai, Coursera
- 2019 Mathematics for Machine Learning: Linear Algebra
Imperial College London, Coursera
- 2019 Mathematics for Machine Learning: Multivariate Calculus
Imperial College London, Coursera
- 2015 Licensed Architect
Colegio de Arquitectos, Granada, Spain

Work Experience

- 2021 Research Intern - Summer
Adobe Research, Adobe Inc.
Mentors: Aaron Hertzmann, Matthew Fisher
- 2019 Teaching Assistant - Summer
Carnegie Mellon University, Language Technologies Institute
11785 Intro to Deep Learning - Professor Bhiksha Raj
Latent and Implicit Generative Neural Models
- 2018 - Studio Instructor
Carnegie Mellon University, School of Architecture
Freshmen and Sophomore BArch
- 2017 - 2019 Studio Instructor
Carnegie Mellon University, School of Architecture
Pre-College
- 2016 - 2019 Research Assistant
Carnegie Mellon University, School of Architecture
Robotic Incremental forming
Robotic 3D-contour crafting

- 2017 - 2018 Teaching Assistant
Carnegie Mellon University, School of Architecture
Advanced Synthesis Option Studio
- 2015 - 2017 Registered Architect
Ladron de Guevara Office of Architecture, owned licensed office
K house, 3-story family house building, Granada, Spain. Built
O house, 2-story family house building, Granada, Spain
Jinx house, 2-story family house building, Cordoba, Spain
- 2014 - 2015 Project Architect
Studio Idealyc, London, United Kingdom
Selwyn Road
Benson House
Vivian Road
Underwood Road
- 2013 - 2014 Project Architect
Cloud9, Enric Ruiz Geli Architecture. Barcelona, Spain.
Ampo Masterplan, Guipuzcoa, Spain.
Ampo Creativity House, Guipuzcoa, Spain,
elBulli Foundation, Girona, Spain.
PortOle, Krasnodar, Russia.
Aiguablava, Girona, Spain.
- 2012 - 2013 Architectural Assistant
ASZ arquitectes, Internship, Barcelona, Spain
- 2011 - 2012 Architectural Assistant
Studio Idealyc, Internship, London, United Kingdom.

Services

- 2020 - Reviewing
International Conference of the Association for Computer-Aided Architectural Design Research in Asia —CAADRIA.

Publications

Artificial Intelligence

- 2021 **Ladron de Guevara, M.**, Fisher, M., Hertzmann A., forthcoming 2022. “Im2Painting: Precise Precise Painterly Stylization”. Under review
- 2021 **Ladron de Guevara, M.**, Schneidman, A., Byrne, D., Krishnamurti, R. forthcoming 2022. “A Multimodal Approach for Grounding Design Attributes”. Under review
- 2021 Veloso, P., Rhee, J., Bidgoli, A., **Ladron de Guevara, M.**, forthcoming 2021. “Bubble2Floor: A pedagogical experience with deep learning for floor plan generation.”. Under review
- 2020 Cazenavette, G., **Ladron de Guevara, M.**, “MixerGAN: An MLP-Based Architecture for Unpaired Image-to-Image Translation. <https://arxiv.org/pdf/2105.14110.pdf>
- 2020 **Ladron de Guevara, M.**, George, C., Gupta, A., Byrne, D., & Krishnamurti,

- R. (2020). “Multimodal Word Sense Disambiguation in Creative Practice”. Forthcoming In IEEE International Conference on Machine Learning and Applications. <https://arxiv.org/abs/2007.07758>.
Video presentation: <https://youtu.be/iD3ZhytPZ9I>
- 2020 Bidgoli, A., **Ladron De Guevara, M.**, Hsiung C., Oh J., and Kang E. (2020) “Artistic Style in Robotic Painting; a Machine Learning Approach to Learning Brushstroke from Human Artists.” In Proceedings of the 29th International Conference on Robot and Human Interactive Communication (RO-MAN). Naples.
- Computational Design and Robotic Fabrication**
- 2020 **Ladron de Guevara, M.**, Borunda, L. R., Byrne, D., & Krishnamurti, R. (2020). “Multi-resolution in architecture as a design driver for additive manufacturing applications”. *International Journal of Architectural Computing*. <https://doi.org/10.1177/1478077120924802>
- 2019 **Ladron de Guevara M.**, Borunda L., Krishnamurti R. (2019) “A Multi-resolution Design Methodology Based on Discrete Models”. In: Lee JH. (eds) *Computer-Aided Architectural Design. “Hello, Culture”*. CAAD Futures 2019. *Communications in Computer and Information Science*, vol 1028. Springer, Singapore. https://doi.org/10.1007/978-981-13-8410-3_7
- 2019 **Ladron de Guevara M.**, Borunda L., Ficca, J., Byrne, Daragh., Krishnamurti R. (2019). “Robotic Free-Oriented Additive Manufacturing Technique for Thermoplastic Lattice and Cellular Structures”, In M. Haeusler, M. A. Schnabel, T. Fukuda (eds.), *Intelligent & Informed - Proceedings of the 24th CAADRIA Conference - Volume 2*, Victoria University of Wellington, Wellington, New Zealand, 15-18 April 2019, pp. 333-342.
- 2019 Borunda L., **Ladron de Guevara M.**, Anaya J. (2019). “Design Method for Optimized Infills in Additive Manufacturing Thermoplastic Components”, In J.P. Sousa, G. C. Henriques, J. P. Xavier (eds.), *Architecture in the age of the 4th Industrial Revolution - Proceedings of the eCAADE 37 / SIGraDI 23 Conference - Volume 1*, University of Porto, Porto, Portugal, 11-13 September 2019, pp. 493-502.
- 2018 Borunda, L., **Ladron de Guevara, M.**, Anaya, J. and Pugliese, G., (2018). “Optimized Additive Manufacturing Building Components”. In 4th International Conference on Technological Innovation in Building (CITE), Madrid.
- 2018 Borunda, L., **Ladron de Guevara, M.**, Anaya J., Pugliese G., “Human-Machine Collaboration Practices for Manufacturing Digitally Designed Complex Surfaces”, (2018). In the International Conference on Construction Research – Eduardo Torroja AEC.
- 2018 Masters Thesis Publication: “Multi-Resolution in Architectural Design and Robotic Fabrication: Novel Resolution Based Computational Method and Free-Oriented Additive Manufacturing Technique”.
https://kilthub.cmu.edu/articles/Multi-Resolution_in_Architectural_Design_

Lectures & Workshops

- 2019 Opening Lecture “The impact of industrial robots in the construction industry 4.0” for the XV Engineering Week, at the Engineering and Technical School, UAJC, Juarez, Mexico.
- 2018 Autodesk Build Space, Robotically Augmented Incremental Forming workshop, co-leader along Jeremy Ficca, Boston, Massachusetts.

Honors and Awards

- 2020 Computational Design Research Support microgrant, Carnegie Mellon University, Pittsburgh
- 2018 - 2020 Graduate Student Small Project Help (GuSH) grant Carnegie Mellon University, Pittsburgh
- 2018 Studio for Creative Inquiry, Frank-Ratyche grant Carnegie Mellon University, Pittsburgh
- 2018 PhD Tuition waiver Carnegie Mellon University
- 2013 B.Arch Thesis Honors Barcelona School of Architecture, Politechnic University of Catalonia
- 2013 B.Arch Thesis exhibition and catalogue publication 10+10 AAAB Center of Barcelona

Additional Information

- Research Unit Co-founder of CRAIDL—*Creative AI and Design Launchpad*—artificial intelligence research group at the CodeLab, School of Architecture, Carnegie Mellon University.
- Languages Spanish (Native), English (Proficient), Catalan (Proficient)
- Programming Python, C, C++, CSS, RAPID
- Packages Pytorch, Scikit-Learn, Numpy, Spacy, NLTK, Scrapy
- Software AutoCAD, 3ds Max, Revit, Dynamo
Rhinoceros, Grasshopper
Photoshop, Illustrator, InDesign
RobotStudio, HAL

AI & CS Courses Taken at Carnegie Mellon University

Artificial Intelligence

16-824 Visual Learning and Recognition	F21
16-726 Learning-based Image Synthesis	S21
10-403 Deep RL and Control	S21
11-747 Neural Networks for NLP	S21
11-777 Multimodal Machine Learning	F20
11-785 Introduction to Deep Learning	S20
11-611 Natural Language Processing	S20
10-601 Machine Learning	F19
10-737 Creative AI	F19

Mathematics

21-120 Differential Integral Calculus	S19
21-241 Matrices and Linear Transformations	S19

Computer Science and Computational Design

15-112 Fundamentals of programming & CS	F18
15-122 Principles of Imperative Computing	F18
48-782 Design Computation I	F17
48-784 Design Computation II	F17