

MANUEL RODRIGUEZ LADRON DE GUEVARA

340 Amber Street, Pittsburgh, PA, 15206

manuelr@andrew.cmu.edu

<https://manuelladron.github.io/>

<https://www.craidl.group>

<https://github.com/manuelladron>

+1 412 692 1063

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 -2022 Research Intern - Summer
Adobe Research, Adobe Inc.
Mentors 2022: Daichi Ito, Jose Echevarria, Yannick Hold-Geoffroy, Yijun Li, Cameron Smith
Mentors 2021: Aaron Hertzmann, Matthew Fisher
- 2021-2022 Co-Instructor
Carnegie Mellon University, School of Architecture
48770 Intro to Machine Learning in Design
NLP and Multi-modal ML
- 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.
- 2023 Thesis Reviews
Invited reviewer at Virginia Tech School of Architecture for 5th and 3rd
year students
- 2020 - Reviewing
International Conference of the Association for Computer-Aided Archi-
tectural Design Research in Asia —CAADRIA.

Services

Publications

Artificial Intelligence

- 2023 **Ladron de Guevara, M.**, Echevarria J., Li Y., Hold-Geoffroy, Y., Smith C.,
Ito D. “Cross-modal Latent Space Alignment for Image to Avatar Translation”.
Under review ICCV 2023
- 2023 **Ladron de Guevara, M.**, Fisher, M., Hertzmann A., forthcoming 2023.
“Attention-Based Painting”.
- 2023 **Ladron de Guevara, M.**, Fisher, M., Hertzmann A., forthcoming 2023.
“Im2Painting: Precise Precise Painterly Stylization”.

- 2022 **Ladron de Guevara, M.**, Schneidman, A., Byrne, D., Krishnamurti, R. “A Multimodal Approach for Grounding Design Attributes”. CUMINCAD 2022
- 2022 Veloso, P., Rhee, J., Bidgoli, A., **Ladron de Guevara, M.**, “Bubble2Floor: A pedagogical experience with deep learning for floor plan generation.”. CUMINCAD 2022
- 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_and_Robotic_Fabrication_Novel_resolution_based_computational_method_and_Free_Oriented_Additive_Manufacturing_technique/7135835/1

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, Pytorch, R

Software AutoCAD, 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 and Statistics

36-600 Over. Statistical Learning and Modeling	F22
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