MANUEL RODRIGUEZ LADRON DE GUEVARA

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Education

2018 - Present 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 Marchine Learning: Linear Algebra
Imperial College London, Coursera

2019 Mathematics for Marchine Learning: Multivariate Calculus
Imperial College London, Coursera

2015 Licensed Architect
Colegio de Arquitectos, Granada, Spain

Work Experience

2023 - Present Co-founder and CEO
Flumio Inc.
Text-to-Fabrication Startup

2018 - Present Studio Instructor
Carnegie Mellon University, School of Architecture
Freshmen and Sophomore BArch

2021-2022 Research Scientist 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

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 familiy 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

2023 Thesis Reviews
Invited reviewer at Virginia Tech School of Architecture for 5th and 3rd year students

2023 - Present Conference Reviewer
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)

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

Publications

Artificial Intelligence

2023 **Ladron de Guevara, M.**, Echevarria J., Li Y., Hold-Geoffroy, Y., Smith C., Ito D. “Cross-modal Latent Space Alignmnet for Image to Avatar Transltion”. 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 Internation al 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

2013 BArch thesis published at the Symposium "Rethinking cities: Framing the Future" with the exhibition My Very Own City (MVOC) curated by Institute for Advanced Architecture of Catalonia (IAAC). Curators: Areti Markopoulou, collaborator: Maite Bravo.
http://www.iaacblog.com/2012/10/08/opening-of-the-world-bank-symposium-rethinking-cities-framing-the-future/

Lectures & Workshops

2023 Panelist, AI and Architecture debate. Forthcoming, Barcelona

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 Inquity, 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

Startup	Co-founder and CEO of Flumio (pre-seed stage)
Research Unit	Co-founder of CRAIDL—*Creative AI and Design Launchpad*—artificial inteligence 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 Leraning 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*