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ANDRESSA CARMO PENA MARTINEZ

SUMMARY STATEMENT

Dr. Andressa C. P. Martinez is an Assistant Professor of Digital Design and Media in the Department of Architecture at the University of Maryland. She holds a Ph.D. and Master's in Urbanism, and a bachelor's degree in Architecture and Urbanism from the Federal University of Rio de Janeiro (FAU/UFRJ). With ten years of full-time teaching experience, she served as Assistant Professor of Architecture and Director of the Digital Fabrication Lab at Judson University (2022–2024) and for seven years at the Federal University of Viçosa in Brazil (2014–2021). During 2018–2019, she was a visiting scholar at Georgia Tech, joining the Shape Computation Lab under Professor Thanos Economou to pursue research in shape grammar.

She co-founded the Nó—Lab Research Laboratory at the Federal University of Viçosa, focusing on computational design and digital fabrication. Her research interests include algorithmic and parametric design, digital fabrication, and, more recently, artificial intelligence. Over several years, she developed and submitted grant proposals to equip a digital fabrication laboratory. Notably, one project funded by FAPEMIG (Fundação de Amparo à Pesquisa do Estado de Minas Gerais) supported the implementation and operation of robotic systems in Architecture.

She is a member of the scientific committee of international CAAD Conferences, including eCAADe (Education and Research in Computer-Aided Architectural Design in Europe), SiGraDi (The IberoAmerican Society of Digital Graphics), and CAAD Futures (biannual International Conference on Computer-Aided Architectural Design).

LANGUAGES

Portuguese (native speaker), English, Spanish

EDUCATION

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|-----------|---|
| 2009-2013 | UFRJ - Federal University of Rio de Janeiro, Rio de Janeiro, Brazil
PhD in Urban Design. Advisor Prof. José Barki
Grantee of: Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ, FAPERJ, Brazil
<i>Top Student Ph.D. Grant (Aluno Nota 10), awarded as a special scholarship by FAPERJ, Rio de Janeiro.</i> |
| 2007-2008 | University of Strathclyde, Glasgow, Scotland
Second year of master's studies, M.Sc. in Urban Design. Advisor: Jelena Petric Gray.
Awarded an ALFA Project (EU) Scholarship. |
| 2006-2008 | UFRJ - Federal University of Rio de Janeiro, Rio de Janeiro, Brazil |

Master's degree, M.Sc. in Urban Design. Advisor: José Ripper Kós. Awarded a CAPES Scholarship (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, Brazil), *1st place in the selection process.*

2000-2005 UFRJ - Federal University of Rio de Janeiro, Rio de Janeiro, Brazil
Bachelor of Architecture and Urbanism. Advisor: José Ripper Kós
Final grade = 94/100 (equivalent to 4.0 GPA)

VISITING SCHOLAR

2018 – 2019 **Georgia Institute of Technology, Atlanta, USA**
Georgia Tech School of Architecture
Visiting scholar at Shape Computation Lab.
Research focus: Ruled-based systems as a computational approach for generative design.
Keywords: Shape grammar, parametric modeling, robotic operations

TEACHING EXPERIENCE

2024
Present **University of Maryland, College Park, MD, USA**
Assistant professor of Digital Design and Media
Undergraduate teaching:
 ARCH470 – Computer Applications in Architecture
 ARCH472: Building Information Modeling
 ARCH4480: Selected Topics in Visual Studies in Architecture;
 Applied Digital Fabrication
 ARCH402: Architecture Design Studio III
Affiliate member of the Artificial Intelligence Interdisciplinary Institute at Maryland (AIM)

2022 – 2024 **Judson University, Elgin, Illinois, USA**
Assistant professor
Director of the Digital Fabrication Lab
Undergraduate teaching:
 DES 121: Design 1
 ARC 122: Communication and Architectonics
 ARC 252: Architectural Design Explorations
 ARC 310: Digital Design Simulation
 ARC 381: Architectural Study Tour
 ARC 410: Advanced Digital Design
 ARC 451: Integrative Architectural Design Studies I

Graduate teaching (Master):
 ARC 610: Advanced Digital Design

Service and Curriculum Development

Curriculum Review Committee member;
ARC 252 Change Proposals, introducing digital graphic design and digital prototyping (laser cutting and 3D printing);
New Course Proposal: Building Information Modeling, according to NAAB criteria.

2014 – 2024	UFV- Federal University of Viçosa, Viçosa, Brazil (DAU-UFV) Department of Architecture and Urbanism Assistant professor, engaged in both undergraduate and graduate teaching, service, mentoring and research. Undergraduate teaching: - ARQ 351: Studio III – Housing - ARQ 354: Studio IV – Urban Design - ARQ 359: Parametric Modeling and Fabrication - ARQ 420: GIS applied to Urban Planning - ARQ 301: Digital Design Graduate teaching (MSc/DSc): - ARQ 621 - Digital Technologies in Construction <u>Service and Committee Work</u> <i>Member of the Graduate Studies Committee</i> <i>Member of the Curriculum Review Committee member</i> <u>Research group Leadership and Curriculum Development</u> <i>Co-founder of Nó.Lab, a Digital Fabrication Lab.</i> <i>New Course Proposal (ARQ 420): GIS (Geographic Information System applied to Urban Planning)</i> <i>New Course Proposal (ARQ 359): Parametric Modeling and Digital Fabrication.</i>
2012 – 2013	UFRJ - Federal University of Rio de Janeiro, Rio de Janeiro, Brazil (FAU-UFRJ) School of Architecture and Urbanism Part-time lecturer, Undergraduate teaching: - DO1: Sketching I, - DO2: Sketching II, - DIG: Digital Graphics, - CFA 2: Architectural Composition
2009	UFRJ - Federal University of Rio de Janeiro, Rio de Janeiro, Brazil (FAU-UFRJ) Faculty of Architecture and Urbanism Part-time lecturer, Undergraduate teaching: DO1: Sketching I

PROFESSIONAL/ACADEMIC MEMBERSHIPS

2025- present	Associate Member, American Institute of Architects (AIA)
2016- present	Member, Ibero-American Society for Digital Graphics – SIGraDi

LICENSURE

2006- present	Licensed Architect, Brazilian Council of Architecture and Urbanism (CAU/BR)
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CURRENT RESEARCH 2014-2024

CAD-CAE-CAM

Parametric Design

Algorithmic Design

Digital Fabrication

Artificial Intelligence

Mass Customization in Architecture

This research aims to systematize a digital model for social housing, associating it with open-source technologies. It also aims to conduct file-to-factory experiments on a real scale.

Form-finding and performance-based design

This research aims to investigate form-finding/performance methods in computational design, including AI technology, such as machine learning.

Digital Fabrication

incorporate discussions on digital manufacturing, particularly 3D printing, with a focus on file-to-factory processes.

FELLOWSHIPS/ GRANTS/ SCHOLARSHIPS

2024-2025

BEDAC Built Environment Deans/ Directors Advancing Change

Fellowship - Dumbarton Oaks Trustees for Harvard University, in Washington, DC.

2019

Project: Robotic arm implementation in a multi-user laboratory (PI) FAPEMIG

(Minas Gerais State Foundation for Research Support), MG, Brazil. APQ-00774-19. The Federal University of Vicosa. U\$ 75,000.

2015

Project: Mais Cultura nas Universidades, Brazilian Government / Federal University of Viçosa, Brazil – Research Team Member.

I participated in the proposal development and writing with university-wide teams. UFV proposal ranked 4rd nationally. Total funding US\$ 312,000; US\$ 58,000 allocated to our research group internally.

2015

Demanda Universal FAPEMIG: Project JAM! Emerging dialogues and digital design processes. Research Team Member. **FAPEMIG** (Minas Gerais State Foundation for Research Support), MG, Brazil. The Federal University of Vicosa. U\$ 12,500.

2012

FAPERJ Doctoral Scholarship – Top Student ('Aluno Nota 10'). Special Scholarship from FAPERJ (Rio de Janeiro State Foundation for Research Support), Rio de Janeiro, Brazil. U\$ 30,000

2009

Doctoral Scholarship Coordination for the Improvement of Higher Education Personnel (CAPES, Brazil) Federal University of Rio de Janeiro – Brazil. U\$ 20,000

2007

Alfa Project Grant for 12 months (European Union). As Master student at University of Strathclyde, Glasgow, Scotland. U\$ 16,800 and tuition

2006

Master (MSc) Scholarship. Coordination for the Improvement of Higher Education Personnel, CAPES, Brazil. Federal University of Rio de Janeiro – Brazil. U\$ 10,000

AWARDS

- 2023 **Best SiGraDi Research 2022:** Talk Digital Futures. BRASIL, A. L. (first author), **MARTINEZ, A. C. P.** (second author) Social Housing Mass Customization: Description of a system for real-time cost and spatial generation. In: XXVI International Conference of the Ibero-American Society of Digital Graphics, Lima, 2022. For this reason, also invited to present at Digital Futures Talk: Best Sigradi Research 2022, organized by Digital Futures World. Available at: www.youtube.com/watch?v=8RK6pD1_3qg Paper:
- 2020 **Honored professor in Architecture at the Graduation ceremony.** The Federal University of Vicosa., Brazil.
- 2006 **International Workshop Global Studio**, University of British Columbia, Vancouver, Canada. Selected to participate in the one-month full-time workshop among hundreds of international applicants.
- 2006 **Ranked 1st** among all applicants in the MSc selection process, PROURB-UFRJ. Graduate Program at Federal University of Rio de Janeiro.
- 2006 **Revista Academia 2005: Best Works and Award Winners 2005**
FAU-UFRJ -School of Architecture and Urbanism, Federal University of Rio de Janeiro Undergraduate Final Year project selected for publication
- 2006 **Revista Academia 2005: Best Works and Award Winners 2005**
FAU-UFRJ -School of Architecture and Urbanism, Federal University of Rio de Janeiro Undergraduate Final Year project selected for publication.
- 2005 **Architect of Tomorrow Award.** Best undergraduate final Project in the State of Rio de Janeiro. IAB-RJ
Honorable Mention
- 2005 **Revista Academia 2004: Best Works and and Award Winners 2004**
FAU-UFRJ -School of Architecture and Urbanism, Federal University of Rio de Janeiro Three undergraduate projects selected for publication
- 2004 **Revista Academia 2003: Best Works and Award Winners 2003**
FAU-UFRJ -School of Architecture and Urbanism, Federal University of Rio de Janeiro Undergraduate project selected for publication
- 2003 **CASA 1.0 – Social Housing Architecture Competition**
ABCP, Brazil/ FAU-UFRJ.
Second Place.

STUDENTS' AWARDS UNDER MY SUPERVISION

- 2022 Student Elisa Arce's **advisor** (Judson University), award in **the student category. Design Studio Mag 2022 AWARDS competition** -promoted by Design Studio Mag and Furrina Magazine in Italy. The awarded work, a lamp, was developed under my supervision in the ARC 410 Advanced Digital Design class.

- 2022 Student Thalia Pineda-Mosquera's **advisor** (Judson University), award in the student category. **LIT Lighting Design Awards**, in Switzerland. The awarded work, a parametric lamp, was developed under my supervision in the ARC 410 Advanced Digital Design class.
- 2022 Student Elisa Arce's **advisor** (Judson University), award in the student category. **LIT Lighting Design Awards**, in Switzerland. The awarded work, a parametric lamp, was developed under my supervision in the ARC 410 Advanced Digital Design class.
- 2021 Debora Mela's **Doctoral advisor**, awarded for the research under my supervision as **Best Presentation Award** at the World CAAD Ph.D Workshop 2021, an internationally competitive forum for doctoral research in computer-aided architectural design.
- 2021 Debora Mela's **Doctoral advisor**, awarded for the research under my supervision as **Best Doctoral Thesis Presentation** at SIGraDi Ph.D. Workshop 2021, representing Latin America, SIGraSi 2021, SIGraDi - Sociedad Iberoamericana de Grafica Digital. 2020.
- 2017 **Deca Studies Prize. Finalist in the national interior design Award**, as undergraduate student Bernardo Rezend's advisor. Design Project: Electronic Quarter: Garage Festival

GUEST EDITOR OF SPECIAL JOURNAL ISSUES

- 2024-present **The International Journal of Architectural Computing** (IJAC). SIGraDi special issue
- 2022 **Gestão e Tecnologia de Projetos** (Brazilian Journal), SiGraDi special issue

SCIENTIFIC COMMITTEE - REVIEWER CONFERENCES AND JOURNALS

- 2024-present **Buildings Journal**, Basel, Switzerland (ISSN 2075-5309)
- 2024-present **Architecture Journal**, Basel, Switzerland (ISSN 2673-8945)
- 2022-present **CAAD Futures Conference** - biannual international conference on Computational architecture
- 2021-present **The International Journal of Architectural Computing** (IJAC). SIGraDi special issue. ISSN : 1478-0771 (Print) | 2048-3988 (Online)
- 2021 **Paranoa**, UnB (Brasilia, Brazil) ISSN: 1679-0944 (Online)
- 2020-present Conference **The eCAADe Conference**
Education and Research in Computer Aided Architectural Design in Europe
- 2019- present Journal **Ambiente Construído**, Porto Alegre, Brasil. ISSN: 1415-8876 (print) | 1678-8621 (online)
- 2019-present Conference **The eCAADe SIGraDi 2019 Conference**, Porto, Portugal
eCAADe (Education and Research in Computer Aided Architectural Design in Europe) and SIGraDi (Sociedad Iberoamericana de Gráfica Digital)

2019 Journal	AREA , Buenos Aires, Argentina. (ISSN 2591-5312)
2019 present Journal	V!RUS Journal (ISSN 2175-974X)
2018 present Journal	Gestão e Tecnologia de Projetos , IAU-USP, Sao Carlos, Brazil. (ISSN 1981-1543)
2016 -present Conference	SIGraDi Conference , Latin America The Ibero-American Society of Digital Graphics

PUBLICATIONS 2015-2025

Accepted

Journal Article

2025 Brasil, A. L. A.; **Martinez, A. C. P.** (2025). "A Comprehensive Review of Robotic Additive Manufacturing Applications in Architecture, Engineering, and Construction". Buildings. [Expected September 2025].

Book chapter

2025 Vojdani, B. F.; **Martinez, A. C. P.**; Woo, D. (2025). "Enhancing Building Performance through AI: Techniques, Models, and Practical Challenges". In: Sedrez, M.; Pitts, G. (Eds.) *Artificial Intelligence - Aided Design for Sustainability* (pp-1-15). Springer Nature, Cham. [Expected October 2025].

Journal Article

2025 Souza, K. D.; **Martinez, A. C. P.**; Carlo, J. C. (2025). "Concepção e desempenho de elementos de controle solar fixos: Uma revisão". PARC: Research in Architecture and Construction, Campinas. [Expected 2025].

Conference Abstract

2025 Daley, H. M.; **Martinez, A. C. P.** (2025). "Decoding resilience: A case study on using Large Language Models to analyze fire-resistant Architectural Design". In: ACSA Conference. 2025 Intersections Research Conference: AI Design Practices, Boston. [September 2025].

Conference Abstract

2025 Vojdani, B. F.; **Martinez, A. C. P.**; Woo, D. (2025). "A Generative-AI Workflow for Daylighting Optimization in Schematic Design". In: ACSA Conference. 2025 Intersections Research Conference: AI Design Practices, Boston. [September 2025].

Journal Articles

2025 Brasil, A. L. A.; **Martinez, A. C. P.** (2025). "A BIM-Based Integrated Model for Low-Cost Housing Mass Customization in Brazil: Real-Time Variability with Data Control". *Architecture* 2025, 5, 54. <https://doi.org/10.3390/architecture5030054>

- 2025 Souza, K. D. de; **Martinez, A. C. P.** (2025). "Processos form-finding nas análises de desempenho do edifício: uma revisão". *Ambiente Construído*, Porto Alegre, v. 25, e140317, jan./dez. 2025. (language portuguese)
<https://dx.doi.org/10.1590/s1678-86212025000100847>
- 2023 Mela, D.; **Martinez, A. C. P.**; Zuin, A. H. L. (2023). "Vertical greening system: The state of the art in digital modeling and simulation". *International Journal of Architectural Computing*. v-0, p. 1-22.
<https://doi.org/10.1177/14780771231197788>
- 2023 Brasil, A. L. A; **Martinez, A. C. P.** (2023). "Analysis and Description of Mass customization as a system – a review". *Tríades em Revista Transversalidades Design e Linguagens*. , 12, 1–15. (language portuguese)
<https://doi.org/10.34019/1984-0071.2023.v12.44864>
- 2022 Mela, D. ; Dias, M. G. ; Silva, T. I. ; Ribeiro, J. E. S. **Martinez, A. C. P.**; Zuin, A. H. L. (2022) . "Estimation of Thunbergia grandiflora leaf area from allometric models". *Comunicata Scientiae*, v. 13, p. 1-1. <https://doi.org/10.14295/cs.v13.3722>
- 2022 Dias, M. G. ; Mela, D. ; Silva, T. I. ; Ribeiro, J. E. S. ; Grossi, J. A. S. ; Zuin, A. H. L. ; **Martinez, A. C. P.**; Barbosa, J. G. (2022). "Leaf area estimation of *Congea tomentosa* using a non-destructive method". *Revista Brasileira de Engenharia Agrícola e Ambiental JCR* , v. 26, p. 729-734.
<https://doi.org/10.1590/1807-1929/agriambi.v26n10p729-734>
- 2021 Souza, M. F. ; Santos, D. M.; **Martinez, A. C. P.**; Souza, D. L. (2021). "Making the logic: a methodological experience of digital design process for small urban interventions". *Gestao e Tecnologia de Projetos*, v. 17, p. 23-42.
<https://doi.org/10.11606/gtp.v17i1.181763>
- 2020 Lucarelli, C. C., Carlo, J. C., **Martinez, A. C. P.** (2020). "Simulation-based optimization for an origami-shaped canopy". *PARC: Pesquisa em Arquitetura e Construção*. V. 11, p. E020013.
<https://doi.org/10.20396/parc.v11i0.8658250>
- 2019 Lucarelli, C. C., Carlo, J. C., **Martinez, A. C. P.** (2019), "Parametrization and solar radiation simulation for optimization of a modular canopy". *PARC: Pesquisa em Arquitetura enConstrução*, v. 10, p. 1-18. (language – english)
<https://doi.org/10.20396/parc.v10i0.8653371>
- 2019 **Martinez, A. C. P.**, Souza, D. L., Santos, D. M., Pedroti, L. G., Carlo, J. C., Martins, M. A. D. (2019), "Avaliação do comportamento mecânico dos polímeros ABS e PLA em impressão 3D visando simulação de desempenho estrutural". *Gestão & Tecnologia de Projetos*. (language – portuguese)
https://doi.org/10.11606/gtp.v14i1.14828_9
- 2016 Santos, D. M., **Martinez, A. C. P.** (2016). "Images of a certain modernity: Klabin House in Campos do Jordão, an instance of architectural experimentation". *Virus JCR*, Volume 1, 1-22.

Book Chapter

- 2024 Souza, D. L.; **Martinez, A. C. P.**; Santos, D. M.; Miyasaka, E. L. (2024) "FabLab UFV: construindo práticas colaborativas". In: Andriza Maria Teodolino de Andrade; Esther Giacomini Silva; Laura Pronsato. (Org.). ArtCulAção Arte, Cultura e Ação na UFV: múltiplas perspectivas na produção cultural universitária. 1ed.Vicosa: UFV, 2024, v. 1, p. 116-128. (language – portuguese).
- 2021 Esteves, I. S. ; **Martinez, A. C. P.** (2021). Proposta de Interface Tangível para Pessoas com Deficiência Visual como sistema de auxílio a Mobilidade Urbana. In: Tiburcio, Tulio; Alberto, Klaus; Andery, Paulo; Barbosa, Sabrina. (Org.). Desafios e oportunidades na pesquisa em Ambiente Construído. 1ed.Juiz de Fora: Editora UFJF, 2021, v. 1, p. 111-119. (language – portuguese)
- 2018 **Martinez, A. C. P.**, Souza, D. L. ; Santos, D. M. ; Miyasaka, E. L. (2019). "Responsive Object in the teaching process - NÓ.LAB, BRAZIL". In: Rodrigo Scheeren; Pablo C. Herrera; David M. Sperling. (Org.). Homo faber 2.0: politics of digital in latin america. 1ed.São Carlos: IAU/USP, 2018, v. 1, p. 24-25.
- 2016 **Martinez, A. C.P.**, (2016), "Flexibility". In: Frederico Braidá; Fernando Lima; Juliane Fonseca; Vinicius Moraes. (Ed.). 101 conceitos de arquitetura e urbanismo na era digital. 1ed.São Paulo: ProBooks. (language – portuguese)
- 2016 **Martinez, A. C.P.**, (2016), "Digital Skin". In: Frederico Braidá; Fernando Lima; Juliane Fonseca; Vinicius Moraes. (Ed.). 101 conceitos de arquitetura e urbanismo na era digital. 1ed.São Paulo: ProBooks. (language – portuguese)
- 2016 **Martinez, A. C.P.**, (2016), "Urban Connectivity". In: Frederico Braidá; Fernando Lima; Juliane Fonseca; Vinicius Moraes. (Ed.). 101 conceitos de arquitetura e urbanismo na era digital. 1ed.São Paulo: ProBooks. (language – portuguese)
- 2014 Silva, L. B. E., **Martinez, A. C. P.**, Castriotto, O, C. M., (2014). "The Diagram Process Method: The Design of Architectural Forma by Peter Eisenman and Rem Koolhaas". In: DUYAN, Efe. (Org.). Architecture and Writing. DAKAM Publishing. v. 1, p. 483-490.

Conference Papers

- 2025 Vojdani, B. F.; Woo, D. **Martinez, A. C. P. (2025)**. "Machine Learning Models for CO₂ Emission Analysis in Campus Buildings". ARCC 2025 International Conference. Emerging challenges: technological, environmental, social. University of Maryland, College Park, MD. Howard University, Washington DC. p. 1-8.
- 2024 Brasil, A. L. A. ; **Martinez, A. C. P.**; Carlo, J. C. (2024). Machine Learning-based Design Parameters Recommendation in Construction Additive Manufacturing. In: XXVIII International Conference of the Ibero-American Society of Digital Graphics SIGRADI – Proceedings, 2024, Barcelona.
- 2022 Brasil, A. L. A. ; **Martinez, A. C. P.** Social Housing Mass Customization: Description of a system for real-time cost and spatial generation. In: XXVI International Conference of the Ibero-American Society of Digital Graphics, Lima, 2022.

- 2022 Dornelas, W. de O.; **Martinez, A. C. P.** Towards a Parametric Variation of Floor Plans: a Preliminary Approach for Vertical Residential Buildings. In: XXVI International Conference of the Ibero-American Society of Digital Graphics, Lima, 2022.
- 2022 Faria, I. A.; **Martinez, A. C. P.** Wikihouse: a parametric approach to generate different spatial arrangements. In: XXVI International Conference of the Ibero American Society of Digital Graphics, Lima, 2022.
- 2022 Brasil, A. L. A.; **Martinez, A. C. P.** Potential for Social Housing Mass Customization in Brazil through the Integration between BIM and AlgorithmicParametric Modeling. In: eCAADe 2022, 2022, Ghent. 40th Conference on Education and Research in Computer Aided Architectural Design in Europe. Ghent: KU Leuven Faculty of Architecture, 2022. v. 2. p. 347-356.
- 2021 Mela, D.; **Martinez, A. C. P.**; Zuin, A. H. L. . Leaf Coverage Quantification for the Design of Vegetated Shading Geometries Using Algorithmic Modeling, Coupled with Imaging Software. In: XXV International Conference of the IberoAmerican Society of Digital Graphics, 2021, Juiz de Fora/ Atlanta. SIGraDI, 2021, Ubiquitous Conference, 2021. v. 1. p. 1463-1473. <https://doi.org/10.5151/sigradi2021-11>
- 2020 Souza, M. F., Santos, D. M, **Martinez, A. C. P.**, Souza, D. L. (2020). "The operationalization of 'A Pattern Language' by using network analysis tools". Proceedings of XXIV SIGraDi - International Conference of the Iberoamerican Society of Digital Graphics, v. 1, p. 128-135
<https://doi.org/10.5151/sigradi2020-18>
- 2020 Matos, E. B., **Martinez, A. C. P.** (2020). "Gridshell structural evaluation criteria based on Upward and Downward Modeling Methods in Karamba3D". Proceedings of XXIV SIGraDi - International Conference of the Iberoamerican Society of Digital Graphics, v. 1, p. 188-195. (language-portuguese).
<https://doi.org/10.5151/sigradi2020-26>
- 2020 Iasbik, M. P., **Martinez, A. C. P.**, Gazel, J. L. T. E. (2020). "Integration of BIM and Algorithmic Design logics through data exchange between Grasshopper plugin and Revit and Archicad software". Proceedings of XXIV SIGraDi- International Conference of the Iberoamerican Society of Digital Graphics v. 1, p. 470-477. (language-portuguese). <https://doi.org/10.5151/sigradi2020-65>
- 2019 Esteves, P. I. S., **Martinez, A. C. P.**, Vegi, L. F. da M., Cardoso, I. R., Rocha, M. N. , Ferreira, R. S., Mònaco, D. S. (2019), "SEEstem: Wearable navigation device for people with visual impairments". Proceedings of 37o eCAADe 23o SIGraDi (eCAADe SIGraDi, 2019).
https://doi.org/10.5151/proceedings-ecaadesigradi2019_438
- 2018 De Toledo e Gazel, J. L., **Martinez, A. C. P.**, Santos, D. M., Souza, D. L. 2 BITS: A case of mass customization for social housing, Proceedings of XXII Congreso Internacional de la Sociedad Iberoamericana de Gráfica Digital (SIGraDi 2018) , 60-65. <https://doi.org/10.5151/sigradi2018-1744>
- 2017 **Martinez, A. C. P.**, Pedroti, L. G., Douza, D. L., Santos, D. M., Martins, M. A. D., "Structural performance simulation based on 3D printing for rapid prototyping", Proceedings of XXI Congreso Internacional de la Sociedad Iberoamericana de

- Gráfica Digital (SIGraDi 2017), 333-339. (language- portuguese).
<https://doi.org/10.5151/sigradi2017-052>
- 2017 Vallejo, M. A. B., Souza, D. L., Santos, D. M., **Martinez, A. C.P.**, “The practice of collaboration in digital processes design: Investigation-action”. Proceedings of XXI Congreso Internacional de la Sociedad Iberoamericana de Gráfica Digital (SIGraDi 2017), p. 85-92 (language – Spanish).
<https://doi.org/10.5151/sigradi2017-014>
- 2017 Vallejo, M. A. B, Santos, D. M., Souza, D. L., **Martinez, A. C. P.**, “Collaboration in digital project processes: conceptual discussions”, Proceedings of V Simpósio Brasileiro de Qualidade do Projeto no Ambiente Construído (SBQP 2017), 1-12. (language – portuguese)
- 2016 **Martinez, A. C.P.**, Santos, D. M., Souza, D. L., Castriotto, C. M., “The study of formal tools in Peter Eisenman's design process”, Proceedings of XX Congreso de la Sociedad Iberoamericana de Gráfica Digital, 2016, Buenos Aires. (SIGraDI 2016), 676-680. (language – portuguese) <https://doi.org/10.5151/despro-sigradi2016-455>
- 2016 Souza, D. L., Costa, A. T., **Martinez, A. C. P.**, Santos, D. M., “Integration analysis of generative modeling with BIM: interoperability, potentials and flow process with the pair Revit®- Dynamo”. Proceedings of XX Congreso de la Sociedad Iberoamericana de Gráfica Digital, 2016, Buenos Aires. (SIGraDI 2016), 466-398. (language – portuguese). https://doi.org/10.5151/despro-sigradi2016-38_5
- 2015 Santos, D. M., Souza, D. L., **Martinez, A. C. P.**, Brinati, P. M., “Interfaces em Ação: sobre interações e layers comunicacionais nas práticas de projeto remoto”. Proceedings of XX Congreso de la Sociedad Iberoamericana de Gráfica Digital, 2016, Buenos Aires. (SIGraDI 2016), 825-830. (language – portuguese) <https://doi.org/10.5151/despro-sigradi2016-694>
- 2015 Souza, D. L, **Martinez, A. C. P.**, Santos, D. M., “The Potential Use of Laser Scanner in Urban Contexts. Proceedings of 16th International Conference CAAD Futures”. The next city - New technologies and the future of the built environment. (CAAD Futures 2015), 124-134.
- 2015 Faria, T. C. A., **Martinez, A. C. P.** “Entre o Aprendizado e a Prática: O uso do SIG no Planejamento Urbano”. Proceedings of Projetar 2015 - originalidade, criatividade e inovação no projeto contemporâneo: ensino, pesquisa e prática, (PROJETAR 2015), p. 1-12. (language – portuguese)

PhD's ADVISEMENT AND MENTORSHIPS 2020-present

- 2024-present Ph.D. student Bahareh Vojdani Fakhr. Integrating Real-Time Occupant Feedback and Environmental Monitoring with Fine-Tuned LLMs for Post-Occupancy Evaluation in University Laboratories. Urban and Regional Planning and Design Ph. D Program. University of Maryland.
- 2023-present Ph.D. Candidate Alexander Lopes de Aquino Brasil. “3d printing through robotics “. PPG.au/UFV Graduate Program in Architecture and Urbanism, UFV, Brazil.

2020-2024	Ph.D. Kelly Diniz, "Dynamic evaluation of solar control elements: computational design process, performance analysis and digital fabrication". PPG.au/UFV - Graduate Program in Architecture and Urbanism, UFV, Brazil.
2020-2023	Ph.D. Debora Mela, "Shape finding of green facades through algorithmic modeling." PPG.au/UFV - Graduate Program in Architecture and Urbanism, UFV, Brazil.

MASTER'S ADVISEMENT (March – Master of Architecture)

2025-present	MArch Holly Marguerite Delay. Building Resilience: how architectural design can mitigate wildfire risk. Master Thesis. Architecture Department. University of Maryland.
2024-2025	MArch Mary Boualy. Rebuilding Lives. Architecture to address affordable housing and homelessness. Master Thesis. Architecture Department. University of Maryland.

MASTER'S ADVISEMENT (MSc – Master of Science)

2021-2023	MSc. Wallace Dornelas on a topic related to mass customization and open design in Architecture. PPG.au/UFV - Graduate Program in Architecture and Urbanism, UFV, Brazil.
2020-2022	MSc. Alexander Lopes Brasil, "Mass customization for Social Housing." PPG.au/UFV - Graduate Program in Architecture and Urbanism, UFV, Brazil.
2019 –2021	MSc. Elisa Matos, "Shape Grammars for Gridshell design." PPG.au/UFV - Graduate Program in Architecture and Urbanism, UFV, Brazil.
2019 -2021	MSc. Marina Iasbik, "BIM Interoperability for Generating Complex Geometries." PPG.au/UFV - Graduate Program in Architecture and Urbanism, UFV, Brazil.
2018 -2020	MSc. Hemani Furfuro, "Structural performance simulation based on 3D printing for rapid prototyping" PPG.au/UFV- Graduate Program in Architecture and Urbanism, UFV, Brazil.
2017-2019	MSc. Paula Esteves, "SEEstem: Wearable navigation device for people with visual impairments". PPG.au/UFV - Graduate Program in Architecture and Urbanism, UFV, Brazil.
2017-2019	MSc. Nayara de Paula, "A Case Study of The WikiHouse System applied to Digitally Fabricated Temporary Shelters." PPG.au/UFV - Graduate Program in Architecture and Urbanism, UFV, Brazil.

PRESENTATIONS - CONFERENCE PAPERS/ INVITED TALKS

2023	Brasil A. L., Martinez, A. C. P. Digital Futures Talk: Best Sigradi Research 2022, organized by Digital Futures World. Live on YouTube May 27, 2023.
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- 2022 **Martinez, A. C. P** What's next? Some thoughts about the computational approach. Chapel series. Department of Architecture. Judson University. March 30, 2022
- 2022 **Martinez, A. C. P** PROURB: LAMO Sessions - NÓ.Lab, , pesquisa computacional e fabricação digital Available at: <https://www.youtube.com/watch?v=zmAGhutvP3w> Language Portuguese.
- 2022 Brasil A. L., **Martinez, A. C. P.** Social Housing Mass Customization: Description of a system for real-time cost and spatial generation. SiGraDi 2022 - XXVI International Conference of the Ibero-American Society of Digital Graphics, in Lima.
- 2022 Dornelas, Wallace; **Martinez, A. C. P.** Towards a Parametric Variation of Floor Plans: a preliminary Approach for Vertical Residential Buildings. SiGraDi 2022 - XXVI International Conference of the Ibero-American Society of Digital Graphics, in Lima.
- 2022 Faria, Igor A.; **Martinez, A. C. P.** Wikihouse: a parametric approach to generate different spatial arrangements. SiGraDi 2022 - XXVI International Conference of the Ibero-American Society of Digital Graphics, Lima, 2022.
- 2021 **Martinez, A. C. P.** Computational logic in processes of Architecture and Urbanism. UFG – Federal University of Goiás - regional Goiás, Brazil
- 2021 **Martinez, A. C. P.** Thinking parametric: computational design processes in Architecture and Urbanism. CICLO DE PALESTRAS ARQ. URB. + ENG. CIVIL. Unilavras - Centro Universitário de Lavras, Brazil.
- 2021 Mela, D.; **Martinez, A. C. P.** Leaf Coverage Quantification for the Design of Vegetated Shading Geometries Using Algorithmic Modeling, Coupled with Imaging Software. XXV International Conference of the IberoAmerican Society of Digital Graphics. Juiz de Fora, Atlanta.
- 2020 Matos, E. B., **Martinez, A. C. P.** Gridshell structural evaluation criteria based on Upward and Downward Modeling Methods in Karamba3D. XXIV SIGraDi International Conference of the Iberoamerican Society of Digital Graphics. Juiz de Fora, Atlanta.
- 2020 Iasbik, M. P., **Martinez, A. C. P.**, Gazel, J. L. T. E. Integration of BIM and Algorithmic Design logics through data exchange between Grasshopper plugin and Revit and Archicad software. XXIV SIGraDi- International Conference of the Iberoamerican Society of Digital Graphics. Juiz de Fora, Atlanta.
- 2018 **Martinez, A. C. P.** Off-Axis: Design & Research from NÓ.Lab, UFV, Brazil. Concave Seminar- Graduate Program. Georgia Tech School of Architecture (Georgia Institute of Technology), Atlanta, USA
- 2017 **Martinez, A. C. P.** Structural performance simulation based on 3D printing for rapid prototyping. XXI Congreso Internacional de la Sociedad Iberoamericana de Gráfica Digital (SIGraDi 2017). (language – portuguese)
- 2016 The study of formal tools in Peter Eisenman's design process. XX Congreso de la Sociedad Iberoamericana de Gráfica Digital (SIGraDI 2016), Buenos Aires, Argentina

PHD DISSERTATION COMMITTEES

2025	Member of the PhD Dissertation Committee for Mariana Alves Zancaneli, Graduate Program in Architecture and Urban Planning, Federal University of Viçosa, Brazil. Dissertation Title: "ATHIS in Brazil: Practices, Limitations, and Stakeholders in Technical Assistance for Social Housing."
2024	Chair of the PhD Dissertation Committee for Kelly Diniz de Souza, Graduate Program in Architecture and Urban Planning, Federal University of Viçosa, Brazil. Dissertation Title: "Avaliação de elementos de controle solar: a interação entre forma e desempenho em processos de projeto computacionais."
2024	Member of the PhD Dissertation Committee for Rodrigo Bicalho Mendes, Graduate Program in Architecture and Urban Planning, Federal University of Viçosa, Brazil. Dissertation Title: "Tecnologias Emergentes na Educação e Industria 4.0 no ensino de Design."
2024	Member of the PhD Dissertation Committee for Caio de Carvalho Lucarelli, Graduate Program in Architecture and Urban Planning, Federal University of Viçosa, Brazil. Dissertation Title: "Performance Investigation of a Climate- Active Top-Lighting Cell Developed with Generative Processes and Digital Manufacturing."
2023	Chair of the PhD Dissertation Committee for Debora Mela, Graduate Program in Architecture and Urban Planning, Federal University of Viçosa, Brazil. Dissertation Title: "Geometrias para fachadas verdes aplicando modelagem algoritmica parametrica."
2023	Member of the PhD Dissertation Committee for Caio Magalhães Castriotto, FECFAU/ UNICAMP - Faculdade de Engenharia Civil, Arquitetura e Urbanismo da UNICAMP, Brazil. Dissertation Title: "Elo Recíproco: um novo sistema de conexões para Estruturas Recíprocas desenvolvido por modelagem algorítmica e Fabricação Digital."

GRADUATE THESIS COMMITTEES

2025	Chair of 1 MArch committee, University of Maryland
2025	Member of 1 MArch committee, University of Maryland
2019-2023	Chair of 7 MSc committees, Federal University of Viçosa (UFV)
2019	Member of 1 MSc committee, Federal University of Juiz de Fora (UFJF)
2015-2023	Member of 17 MSc committees, Federal University of Viçosa (UFV)