SERGIO EDUARDO MUTIS ORDÓÑEZ

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EDUCATION

- **Massachusetts Institute of Technology (MIT)**
  Master of Science in Architecture Studies in Computation
  Master of Science in Electrical Engineering & Computer Science
  2024-2026 - Boston, USA
  - Teaching Development Fellow 25-26 | Avalon Scholarship 24 & 25 | Applicant Mentor 24 & 25 | Arch. Department Fellowship | Forum in Computation Instructor 25 | NASA Zero Robotics Instructor 25 & 26

- **University College London (UCL)**
  Master's Degree in Architectural Design (robotics & AI tracks)
  2021-2022 - London, UK
  - Bartlett AD Gold Medal (best among 32 graduation projects) | Bartlett AD Theory Medal (best among 126 thesis reports) | Rowland Scholarship | Colfuturo Grant | William Goodenough Scholarship | UCL Excellence Scholarship

- **Harvard University**
  Professional Certificate in Computer Science for Artificial Intelligence (edX)
  2021 - Boston, USA

- **Pontificia Universidad Javeriana (PUJ)**
  Bachelor's Degree in Architecture (5-year degree)
  2013-2018 - Bogotá, Colombia
  - 1st Place in 77-Student Graduation Cohort | Order of Academic Merit | 2019 National Thesis Award | PUJ Academic Excellence Grant (best GPU in the department, received 8 consecutive semesters) | CJFD Academic Excellence Distinction | Honorary Admission Scholarship

WORK IN ACADEMIA

- **MIT Media Lab, Critical Matter Group**
  Research Assistant - Digital Fabrication, New Materials, and Robotic Control
  2025-present - Boston, USA
  - Lead the Robotic Fibers Team, developing research on robotic fabrication of intelligent programmable textiles on the human body & across scales

- **MIT Design Intelligence Lab**
  Teaching Assistant - 4.031 Objects & Interaction / 4.044 Interaction Intelligence
  2024-present - Boston, USA
  - Support students on interaction design, embodied and physical AI systems, digital fabrication, and AI-augmented design workflows.

- **University College London (UCL)**
  Researcher / Technical Tutor, Living Architecture Lab
  2022-present - London, UK
  - Teach the robotics module at B-Pro AD M.Arch. and develop autonomous spatial reconfiguration systems with distributed robotics, generative algorithms & multi-agent reinforcement learning.

- **Imperial College London & The Royal College of Art (RCA)**
  Visiting Tutor - Innovation Design Engineering MSc/MA
  2022-2024 - London, UK
  - Provided specialized guidance at the intersection of architecture, AI, mechatronics, and digital fabrication for master's graduation projects.

WORK IN INDUSTRY

- **Zaha Hadid Architects**
  Researcher, Computational Design Research Group (ZHA CODE)
  2022-2024 - London, UK
  - Computational designed and delivered architectural projects across the world, focusing in procedural design, and geometry optimization.
  - Researched robotic fabrication and assembly at the ZHA Tech Lab.
  - Developed tools for comp. design, analytics, and automation.

- **Grupo Valor**
  Director of Research & Innovation - Computational Design & Digital Fab.
  2020-2021 - Bogotá, Colombia

- **AEI Spaces**
  Architect - Lead at projects in Colombia, Mexico, Uruguay & Argentina
  2019-2020 - Bogotá, Colombia

- **OAB. Office of Architecture in Barcelona**
  Architect - Designer for projects in Spain, France, Kazakhstan, Chile, etc.
  2018 - Barcelona, Spain

TAUGHT WORKSHOPS

- **Encoded Assemblies**: encoding, simulating, and stimulating autonomous digital architectures. Bartlett, UCL. Postgraduate A.D. M.Arch. 2023-2025.

- **Embodied Assemblies**: form-finding, digitally-fabricating, and testing robotic-material ecologies of self-reconfiguration. Bartlett, UCL. 2023-2025.

- **Procedural Architectural Design for the Immersive Multi-Player Internet**. with ZHA CODE for Digital Futures 2023.

SKILLS & LANGUAGES

- **Languages:** Advanced (Spanish, English, Italian) Beginner (French, Japanese)

- **Computer-Aided Design:** Rhino3D, Grasshopper, Revit, ArchiCAD, Solidworks, Fusion360, KiCAD, SketchUp, Navisworks, Maya, Unreal Engine.

- **Programming:** C#, Python, C++, HTML, CSS, JavaScript, SQL.

- **Robotics:** 6-axis robot arms (ABB, Universal Robots, RobotDK, Robot Studio), custom robots (Dynamixel framework, Arduino, Raspberry Pi, Unity)

- **Digital Fabrication:** Electro-Spinning, Electro-Flocking, CNC-milling, 3D-printing, Casting, PCB-milling, Hot-Wire Cutting, Woodwork, Laser-Cutting.

VOLUNTEER LEADERSHIP

- **Apata Colombia**
  Co-Founder, Design Director, Peacemaking Volunteer
  2017-present - Colombia
  - 2024 Peacemaking Latin America Prize | 2022 & 2023 Peace Entrepreneurship Award | 2021 National Impact Generation Award

RESEARCH PUBLICATIONS

- **eCAADe** - Conference Paper (in peer-review)
  Mutis, S. Ataman B. 2026. "Combinatorial Assembly Optimization: A Stock-Aware Multi-Objective Method for Discrete Multi-Material Structures."

- **ACM - SIGGRAPH** - Conference Paper (in peer-review)
  Mutis, S, Wan J, Mahmoud A, Farahi B. 2026. "Electrospun Fields: 3D Nano-Fiber Material Computation as Design Method". Los Angeles, USA.

- **ACM - SIGGRAPH** - Conference Paper (in peer-review)
  Mutis, S. Leeyouk S, Farahi B. 2026. "Somatic Mapping: A Method for Translating Pre-Cognitive Affect into Urban-Scale Computational Storytelling".

- **CAADRIA** - Conference Paper
  Mutis S, et al. 2026. "Tessellated Biomes: Distributed Robotic Assemblies for Architectural Resilience". Humanistic Computation & Intel. Hsinchu, Taiwan.

- **ISEA** - Conference Paper (in peer-review)
  Zhang H, Mutis S, Farahi B. 2026. "A Computational AI-Driven Design Method and Participatory Public Art". Dubai.

- **ACM - CHI** - Conference Paper (in peer-review)
  Mutis, S. et al. 2026. "InSituWear: On-Body Fabrication of Custom-fit Wearables using Melt-drawn PCL Filaments". Barcelona, Spain.

- **NeurIPS** - Conference Paper
  Farahi, B., Mutis, S. et al. 2025. "AI and Public Art from Personal Affect and Collective Empathy". NeurIPS Creative AI Track. San Diego, USA.

- **NeurIPS** - Conference Paper
  Farahi, B., Zhang, H., Kim, S., Mutis, S., Wang, Y., Dai, C. 2025. "Gaze to the Stars: AI, Storytelling and Public Art". NeurIPS Creative AI Track. San Diego.

- **ACADIA** - Conference Paper
  Chen H, Peng J, Zhang L, Jiang F, Siedler F, Mutis S, Gheo. O, Hosmer T. 2025. "Distributed Robotic Assembly: Multi-Agent RL for Decision Optimization".

- **ACM - Symposium of Computational Fabrication** - Conference Paper
  Mutis S, Kyaw A, Gallardo R, Mykhaylychenko D, Demaine E. 2025. "Self-Folding Modular Chain Robot for Shape-Changing Objects". MIT.

- **ACM - MAB** - Conference Paper
  Mutis S, et al. 2025. "Reclaiming Public Space Through Participatory Storytelling". Proceedings of the Media Architecture Bienale. ACM.

- **ACM - SIGGRAPH - Sparks** - Keynote
  Farahi, B., Mutis, S. 2025. "AI and Public Art from Personal Affect and Collective Empathy" Entangled (Im)materialities. ACM.

- **International Journal of Architectural Computing (IJAC)** - Journal Paper
  Hosmer, T., Mutis, S. et al. 2024. "Autonomous ecologies of construction: Collabrobotic robotic material eco-systems with deep multi-agent RL"

- **Hong Kong University, ACADIA X CAADRIA** - Exhibition
  Mutis, S., Hughes, E., Ibrahim, F., Papoutsi, G. 2023. "Diffusive Habitats." In Habits of the Anthropocene, Nov14-29. Hong Kong University.

- **ACADIA** - Conference Paper
  Hosmer, T., Mutis, S. Hughes, E. et al. 2023. "Autonomous Collaborative Robotic Reconfiguration with Deep Multi-Agent RL (ACRR+DMARL)."

- **ACADIA** - Conference Paper
  Mutis, S., Hughes, E., Ibrahim, F., Papoutsi, G. 2023. "Diffusive Habitats: Computational Planning and Robotic Assembly of Architectural Ecologies"

AWARDS

- **Architizer A+ Awards** – Architecture + AI First Place
  2024 - Chengdu, China | recognized for AI innovation in architecture

- **Paris Design Awards -** Emergent Designer of the Year
  2024 - Paris, France | Awarded at Espace Niemeyer in Paris

- **Design Educates Awards** - Winner in Responsive and Universal Design
  2023 - Melle, Germany | Jury led by Prof. Toyo Ito and Prof. Achim Menges

- **A' Design Award** - Winner in Generative, Algorithmic, and AI-Aided Design
  2023 - Milano, Italy | Hosted by the Milano Design Museum

- **A+D Awards** – In-School Award Winner
  2021 - Los Angeles, US | Recognized for social innovation and vision

- **Paris Design Awards** – Emerging Architect of the Year
  2021 - Paris, France | Awarded at La Caserne Gallery in Paris

- **Rethinking the Future Awards** – Housing & Territory Award
  2021 - Delhi, India | Recognized for social innovation and vision

- **Tamayouz Excellence Award** - International Graduation Projects Award
  2021 - Bagdad, Irak | Recognized for excellence in design for society

- **Architecture MasterPrize** – Best of Best Academic Award
  2020 - Bilbao, Spain | Hosted by the Guggenheim Museum Bilbao

- **Colombian Biennale of Architecture** – Student Award
  2020 - Bogotá, Colombia | Hosted by the Colombian Society of Architects

- **Gaudi Architecture Prize** – Residential Building Award
  2020 - Bangalore, India | Recognized for social innovation with technology

- **Colombian National Thesis Award**
  2019 - Bogotá, Colombia | Hosted by the Colombian Society of Architects

EXHIBITIONS & KEYNOTES

- **XXIX Colombian Biennale of Architecture** - Keynote
  2024 "Design Authorship in the Age of Autonomous Machines". Cartagena,

- **Chicago Architecture Biennial** - Exhibition
  Zaha Hadid Architects and ArchAgenda. 2023. "Metrotopia Metaverse"

- **Venice Biennale of Architecture** - Exhibition
  Zaha Hadid Architects and ArchAgenda. 2023. "Metrotopia Metaverse"

- **London Festival of Architecture** - Exhibition Feature & Keynote
  Mutis, S., Durand, J., Keerti, M. 2023. "Phygital Assemblies". with ZHA CODE.

- **Imperial College London, Design Engineering Seminar** - Keynote
  Mutis S. "Mechatronic Inhabitatation & Adaptive Communities".

- **UCL Bartlett School of Architecture, B-Pro Book 2022** - Book Feature
  "Diffusing Babel, recreating an authorship model for living architecture"

- **XXVII Colombian Bienale of Architecture** - Book Feature & Keynote
  Mutis, S. 2020. "Hábitat para Población Vulnerable" In Bienal Colombiana de Arquitectura y Urbanismo 2020, edited by M. Uribe, 413. SCA.