Matteo Deval
Research fellow / Inventor

Research fellow specializing in the integration of robotics and artificial intelligence in wood construction. Focused on computational design, digital fabrication, and augmented reality. Developed and patented the "LokAlp" wood construction system based on generative design and robotic arm manufacturing.

PERSONAL DETAILS

Date and place of birth	**29/08/1999, Aosta, Italy**	E-mail	**matteo.deval99@gmail.com**
Phone number	**+39 3348954119**	LinkedIn	**linkedin.com/in/matteodeval**
Website	**www.devalmatteo.com**	Languages	<u>Italian</u>: **Native** / <u>English</u>: **Professional** / <u>French</u>: **B2**

RESEARCH ACTIVITY / TEACHING

15/05/2024 - Ongoing

Research Fellow - Indexlab
Indexlab - Politecnico di Milano

- Research fellow at Indexlab research lab, supervised by Professor P. Ruttico, specializing in the integration of robotics and artificial intelligence in wood construction.
- Supervised master's theses on AI applications in wood building systems.

2020 - 2024

Teaching Assistant
Politecnico di Torino

- Assisted students in reviewing parametric codes and preparing teaching materials.

03/03/2022 - 03/04/2022

Scholarship for research activity "Phygital Exhibition"
Politecnico di Torino

- Developed augmented reality digital scenarios accessible via smartphones.

PATENT / PUBLICATIONS

30/06/2025

Deval, M., & Ruttico, P. (2025). LokAlp: A Reconfigurable Massive Wood Construction System Based on Off-Cuts from the CLT and GLT Industry. Sustainability, 17(13), 6002. https://doi.org/10.3390/su17136002

17/07/2025

Ruttico, P., Bordoni, F., & Deval, M. (2025). Woodot: An AI-Driven Mobile Robotic System for Sustainable Defect Repair in Custom Glulam Beams. Sustainability, 17(12), 5574. https://doi.org/10.3390/su17125574

07/11/2023

Patent – Modular wood-based building system
Politecnico di Milano

- Inventor of wooden modular construction system "LokAlp" registered with EUIPO - European Union Intellectual Property Office. ID Code: 015040194 (001-009), class 25 "Building and construction elements" subclass 02 "Prefabricated or pre-assembled building elements".

PROFESSIONAL EXPERIENCE

17/02/2023 - 17/08/2023

Computational Design Assistant - Rotterdam
Studio RAP - Innovation Dock // Rotterdam, Netherlands

- Internship at an architecture firm specialized in computational design and digital fabrication. Contributed to custom projects involving robotic additive manufacturing.

29/03/2021 - 30/06/2021

Design Assistant - Bruxelles
UNAA - Urban Nation Architects & Associates // Bruxelles, Belgium

- Introduced and implemented a new Unreal Engine 4-based workflow for architectural visualization.

01/09/2019 - 05/10/2020

App Developer ArchViz / Virtual Reality

- Game development of mobile and desktop applications featuring fully interactive environments.

EDUCATION

20/08/2021 - 01/03/2024	**Master's Degree in "Architecture for Sustainability"** Politecnico di Torino • Final grade: 110/110 cum laude with Honorable Mention • Title of experimental thesis: "Discrete Blockbau Architecture"
14/12/2021 - 01/03/2024	**Honour Program ASP Alta Scuola Politecnica** Politecnico di Torino - Politecnico di Milano • Selected among the top 150 master's students in architecture, engineering, and design at Politecnico di Milano and Politecnico di Torino. Completed the advanced program alongside the master's focused on research, industry, and innovation.
17/02/2023 - 17/08/2023	**Master's thesis abroad - Innovation Dock Rotterdam** Politecnico di Torino - Studio RAP // Rotterdam, Netherlands • Master's thesis conducted in collaboration with the Dutch robotics design firm Studio RAP.
02/10/2018 - 19/07/2021	**Bachelor's Degree in "Architecture"** Politecnico di Torino • Final grade: 107/110
26/09/2019 - 19/07/2021	**Young Talents Program** Politecnico di Torino • Selected among the top 40 Bachelor of Science in Architecture students at Politecnico di Torino for an advanced education program parallel to the bachelor's degree.
19/02/2021 - 25/06/2021	**Young Talents Erasmus+ - Bruxelles** ULB - Université Libre de Bruxelles // Bruxelles, Belgium

AWARDS / CERTIFICATIONS

07/04/2025	**Nominee EUmies Awards -** Young Talents 2025
13/11/2024 - 14/11/2024	**Doosan Robotics -** Advanced Course for collaborative robots
24/10/2024	**First Prize ArchDaily -** Best Master's Thesis
26/03/2024	**Honorable Mention -** Non-Architecture Competition
22/06/2022	**First Prize -** Courmayeur Mont Blanc Foundation
19/05/2021	**Critics' Award -** BAC2021 Best Architecture Competition
02/06/2020	**Second Prize -** BAC2020 Best Architecture Competition

WORKSHOPS AND STUDENT TEAMS

26/09/2022 - 13/12/2023	**Student Team SHELTER** Politecnico di Torino • Designed, constructed, and installed an alpine bivouac transported by helicopter for glacier melting monitoring in Valle d'Aosta, commissioned by the DIATI Department, Politecnico di Torino.
26/04/2022 - 04/06/2022	**International Workshop "Interpréter la Ville" // Paris, Turin** École Pratiques des Hautes Études - Politecnico di Torino
27/09/2021 - 02/10/2021	**Workshop "Atelier 2000" // High-altitude Architecture Design** Politecnico di Torino // Valle d'Aosta

SOFTWARES / CODING

Computational Design: Grasshopper, WASP	**3D Printing:** Ultimaker S3, Bambu Lab
Deep Learning: PyTorch, ComfyUI (Flux/SD)	**3D Modeling:** Rhino, Sketchup, Revit, AutoCAD
Robotics: ABB / Doosan / Fanuc	**Rendering:** V-Ray, Enscape, Lumion, Twinmotion
App development: Unreal Engine 4|5	**Post-production:** Adobe Suite