CASSIA DE LIAN CUI

BUILDING ENGINEER
PHD CANDIDATE IN ENGINEERING-BASED ARCHITECTURE AND URBAN PLANNING - XXXVII Cycle

CONTACT DETAILS

EDUCATION

10/2021 - current
Rome, Italy

SAPIENZA UNIVERSITY OF ROME
Department of Civil, Building and Environmental Engineering
PhD in Engineering-based Architecture and Urban Planning
Research fields: Industrial archaeology, recovery and conservation of historical buildings. Digital processes, knowledge representation and management, heritage Building Information Modeling, ontology, linked data and fuzzy logic
Supervisors: Prof. Edoardo Currà, Prof. Antonio Fioravanti

03/2024 - 08/2024
College Station, TX
United States

TEXAS A&M UNIVERSITY (TAMU)
Department of Architecture
PhD Visiting Scholar
Research fields: Building Information Modeling (BIM), Building Design, Computational Methods, Generative AI, Large Language Models (LLMs) and Natural Language Processes
Department host: Prof. Wei Yan

09/2015 - 07/2021
Rome, Italy

SAPIENZA UNIVERSITY OF ROME
Department of Civil, Building and Environmental Engineering
Master's Degree in Building Engineering and Architecture-Single Cycle
Thesis: Urban Space and Industrial Heritage in Chongqing. A project for a creative district in the Jiangling factory area, former 10th Arsenal.
Final grade: 110/110 cum Laude
Supervisors: Prof. Antonio Cappuccitti, Prof. Edoardo Currà

06/2020 - 01/2021
Chongqing, China

CHONGQING UNIVERSITY
Thesis research for Master's Degree in Building Engineering and Architecture
Research fields: history of urban development in Chongqing and urban planning tools in China, industrial heritage in Chongqing, analysis of rehabilitation interventions, concept and evolution of cultural and creative district in China

09/2008 - 07/2015
Rome, Italy

NATIONAL BALLET ACADEMY OF ROME, INSTITUTE OF HIGHER EDUCATION IN ART, MUSIC AND DANCE (AFAM)
Academic Diploma equivalent to a Bachelor's Degree
Main subjects: classical technique, contemporary technique, composition, repertoire, history of art, dance theory and history, solfege and history of music

09/2010 - 06/2015
Rome, Italy

ISTITUTO SALESIANO VILLA SORA
High School Scientific Diploma
Final Grade: 100/100

09/2010 - 06/2015
Beijing, China

BEANSTALK INTERNATIONAL BILINGUAL SCHOOL
Bilingual High school (English-Chinese), Visiting student for one semester per year

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PROFESSIONAL EXPERIENCE
11/2023-12/2023
Rome, Italy

SAPIENZA UNIVERSITY OF ROME
Independent employment contract a the Department of Civil Building and Environmental Engineering
Development of analyses and studies related to construction details of reinforced concrete structures of the XX century
Elaboration of graphical representation of the constructive elements of specific chosen case studies

05/2021-03/2022 Rome, Italy	ARTELIA ITALY **Assistant Designer and Assistant CM at ER-ITALY-Turnkey** Support in the design phase and for construction management activities Use of the BIM methodology in all project phases, from preliminary to executive Assistance in architectural survey activities Cost analysis and testing checks
04/2020-07/2020 Rome, Italy	JOHN HOLLAND **Engineering Virtual Intern** Managed the review of different project's drawings and identification of the changes based on the architectural and structural development of the project Recommended a subcontractor's work based on different tenders' rates comparison
01/2020-07/2020 Rome, Italy	SAPIENZA UNIVERSITY OF ROME **Assistant librarian - Faculty of Civil and Industrial Engineering** Provided assistance to students with particular attention to the first level reference service Responsible for distribution, retrieval, relocation of the books

PROFESSIONAL QUALIFICATION

01/2022 Rome, Italy	SAPIENZA UNIVERSITY OF ROME Department of Civil, Building and Environmental Engineering **Qualification to practice as Professional Engineer - Section A, Civil and Environmental Sector**

TEACHING ACTIVITIES

10/2021 - current Rome, Italy	SAPIENZA UNIVERSITY OF ROME Department of Civil, Building and Environmental Engineering **Tutor and Project Lab Activity Assistant** *Course*: Project for building restructuring and restoration (Prof. Edoardo Currà) *Academic discipline*: Area 08 - Civil engineering and architecture Building Design ICAR/10 - Master's Degree in Building engineering and architecture
10/2023 - current Rome, Italy	SAPIENZA UNIVERSITY OF ROME Department of Civil, Building and Environmental Engineering **Tutor and Project Lab Activity Assistant** *Course*: Integrated Design (Prof. Antonio Fioravanti) *Academic discipline*: Area 08 - Civil engineering and architecture Building Design ICAR/10 - Master's Degree in Building engineering and architecture
01/2023 - 06/2023 Rome, Italy	SAPIENZA UNIVERSITY OF ROME Department of Civil, Building and Environmental Engineering **Tutor and Project Lab Activity Assistant** *Course*: Architectural and Building Design 1 (Prof. Cesira Paolini) *Academic discipline*: Area 08 - Civil engineering and architecture Building Design ICAR/10 - Master's Degree in Building engineering and architecture

RESEARCH ACTIVITIES

10/2024 - current Rome, Italy	SAPIENZA UNIVERSITY OF ROME Department of Civil, Building and Environmental Engineering **Head of the research** Projects for Initial Research - Type 2 2024 Sapienza Research Calls Next-Generation Heritage Recovery and Valorization Processes: Prototyping an AI-Driven Virtual Assistant for Data Integration and Management using Generative AI models. *Tutor*: Prof. Edoardo Currà
03/2024 - current College Station, TX United States	TEXAS A&M UNIVERSITY Department of Architecture **Research group component** BIM-SIM Research Group (Building Information Modeling and Simulation) - CRS Center

11/2023 - current Rome, Italy	SAPIENZA UNIVERSITY OF ROME Department of Civil, Building and Environmental Engineering **Head of the research** Projects for Initial Research - Type 1 2023 Sapienza Research Calls Industrial Heritage and Archaeology. A fuzzy representation model for tangible and intangible knowledge. *Tutor*: Prof. Edoardo Currà
01/2023 - current Rome, Italy	SAPIENZA UNIVERSITY OF ROME Department of Civil, Building and Environmental Engineering **Research group component - University Project 2022** **Lost in translation**: translating into knowledge the archeo-industrial investigations of tangible and intangible assets. The palimpsests of water industries in Latium. *Scientific Coordinator*: Prof. Edoardo Currà *Academic disciplines*: Building Design ICAR/10
11/2023 - current Rome, Italy	SAPIENZA UNIVERSITY OF ROME Department of Civil, Building and Environmental Engineering **Research group component** *National research project*: PRIN 2022 "RE3WORK – REsilient REtrofitting and REuse of Water heritage and built environments: multi-objective Optimization for RisK mitigation and cultural enhancement" *Scientific Coordinator*: Prof. Fabio Fatiguso (POLIBA) *Sapienza Unit Scientific Coordinator*: Prof. Edoardo Currà *Academic disciplines*: Building Design ICAR/10
04/2023 - current Rome, Italy	SAPIENZA UNIVERSITY OF ROME Scientific Collaboration Agreement between Teatro dell'Opera di Roma and Department of Civil, Building and Environmental Engineering (DICEA) **Research group component** *Scientific Coordinator DICEA*: Prof. Edoardo Currà *Scientific Coordinator Teatro dell'Opera*: Prof. Francesco Giambrone
12/2020 - current Rome, Italy	SAPIENZA UNIVERSITY OF ROME Scientific Collaboration Agreement between The Villa Adriana and Villa d'Este Autonomous Institute - Sanctuary of Hercules - Ministry of Culture and Department of Civil, Building and Environmental Engineering (DICEA) **Research group component** *Scientific Coordinator DICEA*: Prof. Edoardo Currà *Scientific Coordinator IPZS*: Dott. Sergio Del Ferro *Research group of the VaVe Institute*: prof. A. Bruciati, Arch. L. Bernardi, Arch. S. Del Ferro *Sapienza Research Unit:* prof. E. Currà, ing. A. D'Amico, ing. M. Angelosanti, ing. M. Russo, ing. L. Severi, ing. C.D.L. Cui
05/2019 - 12/2024 Rome, Italy	SAPIENZA UNIVERSITY OF ROME Department of Civil, Building and Environmental Engineering **Research group component** National research project: PRIN 2017 "BE S2ECURE" (make) Built Environment Safer in Slow and Emergency Conditions through behavioUral assessed/designed Resilient solutions - Scientific Coordinator: Prof. Enrico Quagliarini (UNIVPM) Local Scientific Coordinator (Sapienza): Prof. Edoardo Currà Academic disciplines: Building Design ICAR/10

SCIENTIFIC ASSOCIATIONS	**AIPAI** Italian Association for the Archaeological and Industrial Heritage **Ar.tec.** Building Design Scientific Association **eCAADe** Education and research in Computer Aided Architectural Design in Europe

CONFERENCES AND WORKSHOPS

7-8/11/2024
Ravenna, Italy

NEW FRONTIERS IN CONSTRUCTION MANAGEMENT WORKSHOP 2024
Workshop Speaker
Paper title:" Integrating HBIM and Information Ontologies for enhanced management of layered archaeological sites"

29-31/10/2024
Bergamo, Italy

REUSO 2024 - DOCUMENTATION, RESTORATION AND REUSE OF HERITAGE
Conference Speaker
Paper title: "AI-Powered Built Heritage: Enhancing Interpretation and Recovery processes with Generative AI Models"

12-15/09/2024
Nicosia, Cyprus

ECAADE 2024 - 42ND EDUCATION AND RESEARCH IN COMPUTER AIDED ARCHITECTURAL DESIGN IN EUROPE CONFERENCE - DATA-DRIVEN INTELLIGENCE
Conference Speaker
Paper title: "Ontology-Driven Approach for Geometry Segmentation and Interpretation in Architectural Heritage/archaeology"

12-15/06/2024
Palermo, Italy

COLLOQUI.AT.E 2024 - ARCHITECTURAL ENGINEERING IN ITALY AND WORLDWIDE. COMPARING EXPERIENCES
Selected Paper for Presentation
Selected Speaker
Paper title: "Industrial archaeologies of complex palimpsests. Application of semantic web technologies to digitalise the knowledge path from data to interpretation."

11/12/2023
Virtual meeting

4TH WORLD CAAD PHD WORKSHOP- ACADIA, ASCAAD, CAADRIA, ECAADE, SIGRADI
Selected PhD Speaker
Each CAAD Organization, which includes ACADIA, ASCAAD, CAADRIA, eCAADe, and SIGraDi, has nominated three selected Ph.D. candidate authors to present during the annual workshop with the International CAAD Community
Presentation title: Unicum Tivoli: Archaeology, Industrial Heritage and Context. Technologies and digital knowledge

13/11/2023 -16/11/2023
Florence, Italy

CONVR 2023 - 23° INTERNATIONAL CONFERENCE ON CONSTRUCTION APPLICATIONS OF VIRTUAL REALITY
Conference Speaker
Paper title: "Modeling and managing built heritage knowledge: An ontology-based approach for multi-layered Archeologies and Historical Production Process representation"

03/11/2023 -04/11/2023
Venice, Italy

THE TRANSFORMATION OF EUROPEAN HISTORICAL SHIPYARDS AND ARSENALS (EHS&A)
Participation at the international scientific workshop
University of Bologna - University of Oxford -AIPAI (Italian Association for the Archaeological and Industrial Heritage)

20/09/2023 -23/09/2022
Graz, Austria

ECAADE 2023 - 41ST EDUCATION AND RESEARCH IN COMPUTER AIDED ARCHITECTURAL DESIGN IN EUROPE CONFERENCE - DIGITAL DESIGN RECONSIDERED
Conference Speaker
Paper title: "Knowledge Modeling and Fuzzy Ontologies Integration for Classical and Industrial Archaeologies"

14/06/2023 -17/06/2023
Bari, Italy

COLLOQUI.AT.E 2023 - IN TRANSITION: CHALLENGES AND OPPORTUNITIES FOR THE BUILT HERITAGE
Conference Participant
Paper title: "Digital Technology and digital Knowledge for the Archaeological and Industrial Heritage"

14/06/2023 Bari, Italy	INNOVATI - WORKSHOP AR.TEC. Group work Presentation "A systematic review of energy retrofitting by means of innovative envelope technologies: current state and future trends" Participation in PICO Session for doctoral students with presentation of doctoral thesis research project
13/09/2022 -16/09/2022 Ghent, Belgium	ECAADE 2022 - CO-CREATING THE FUTURE: INCLUSION IN AND THROUGH DESIGN Partecipation at the PhD workshop with research project presentation "Industrial heritage knowledge modeling: tangible and intangible assets of the water-based industries in Lazio, Italy."
02/11/2022 -04/11/2022 Porto, Portugal	REUSO 2022 - DOCUMENTATION, RESTORATION AND REUSE OF HERITAGE Conference Speaker *Paper title*: "H-BET Historic Built Environment Typologies. Open spaces and SUOD events in the compact historic town"
08/09/2022 -10/09/2022 Genoa, Italy	COLLOQUI.AT.E 2022 - HISTORY AND INNOVATION Conference Participant
05/09/2022 -07/09/2022 Genoa, Italy	FORMATI & INNOVATI - WORKSHOP AR.TEC. Group work to write an English-language journal article covering the three macro areas of Technologies Construction History and Preservation, Construction and Building Performance e Building and Design Technologies
09/06/2022 -11/06/2022 Rome - Tivoli, Italy	2° GENERAL STATES OF INDUSTRIAL HERITAGE Conference Speaker and assistance to the organizing committee *Paper title*: "Waterfront industrial heritage: the case of Chongqing between strategies and intervention scenarios"

LANGUAGE SKILLS	Italian (native language) Chinese (native language)	English (proficient) French (basic knowledge)
IT SKILLS	Microsoft Office (Word /Power Point/Excel/Project) Autodesk (Autocad, Revit, Recap Pro, Dynamo) Sketch up	Ontology editor (Protègè, Neo4J) Rhinoceros Adobe Creative Cloud (Photoshop, Acrobat, Illustrator, Indesign) Team System

CERTIFICATIONS, COURSES AND AWARDS

INTERNATIONAL CONFERENCE REUSO 2024
Special mention for the paper entitled "AI-Powered Built Heritage: Enhancing Interpretation and Recovery processes with Generative AI Models" |10/2024|

AR.TEC. BUILDING DESIGN SCIENTIFIC ASSOCIATION
Selected paper for presentation at the Colloqui.AT.e Conference 2024 |06/2024|

WORLD CAAD PHD WORKSHOP
Contest - Selected speaker at the 4th World CAAD PhD Workshop (Computer Aided Architectural Design), representing the eCAADe community
PhD research presentation and discussion with the global CAAD community | 12/2023 |

SAPIENZA UNIVERSITY OF ROME
Contest - Winner of the Call for Proposals for the Funding of Mobility Periods Abroad for Doctoral Students of XXXVII and XXXVIII cycle 2023 |visiting period March - August 2024|
Host institution: Texas A&M University, Department of Architecture
Host institution supervisor: Dr. Wei Yan

AR.TEC. BUILDING DESIGN SCIENTIFIC ASSOCIATION
Contest - Artec Innovati Award 2022 - First Price "A systematic review of energy retrofitting by means of innovative envelope technologies: current state and future trends" | 05/2023 |

UNIVERSITÉ PARIS 1 PANTHÉON-SORBONNE - UNIVERSITY OF PADOVA - UNIVERSIDADE DE ÉVORA
Course - "Techinques et patrimoine" | 03/2023-05/2023 |
Histoire des techinques (History of technology)
Le patrimoine industriel (Industrial Heritage)
Les paysages techniques (Techniques for landscapes)

ECAADE - EDUCATION AND RESEARCH IN COMPUTER AIDED ARCHITECTURAL DESIGN IN EUROPE
Contest - grant winner for young researchers - PhD research project presentation | 09/2022 |

SAPIENZA UNIVERSITY OF ROME
Elected representative of doctoral students to the Council of the Department of Civil, Construction and Environmental Engineering | 2022-2025 |

SAPIENZA UNIVERSITY OF ROME
Excellent Graduates Award a.y. 2019-2020 - Faculty of Civil and Industrial Engineering | 01/2022 |

SAPIENZA UNIVERSITY OF ROME
Faculty of Civil and Industrial Engineering
Winner of the 2019-2020 Call for Student Collaboration in the Department of Civil, Building and Environmental Engineering (Library and Laboratories) | 01/2020-01/2021 |

CONFUCIUS INSTITUTE HEADQUARTERS
Preparation course for HSK (Hanyu Shuiping Kaoshi) Level 5 | 12/2020 |

MCNEEL EUROPE
Rhino Skill course Architecture level 1 |10/2020 |

BEIJING LANGUAGE AND CULTURE UNIVERSITY
Intensive Chinese course - Advance Chinese Language Certificate | 08/2014 |

PUBLICATIONS

CLASS A JOURNAL ARTICLES

Russo Martina, De Fino Mariella, **Cui Cassia De Lian**, Tavolare Riccardo, Fatiguso Fabio, Currà Edoardo (2024)
"A tailored workflow for the valorization projects of industrial heritage through a BIM-based VR tour". SCIentific RESearch and Information Technology Journal (SCIRES IT) Vol 14, Issue 2 (2024), pp. 1-12. https://doi.org/10.2423/i22394303v14n2p1

Currà Edoardo, D'Amico Alessandro, Russo Martina, Angelosanti Marco, **Cui Cassia De Lian**, Quagliarini Enrico (2023).
'H-BET Historic Built Environment Typologies. Open spaces and SUOD events in the compact historic town' VITRUVIO - International Journal of Architectural Technology and Sustainability, 8 (special issue), pp. 48-57.

CONFERENCE PROCEEDINGS

Cui Cassia De Lian, Edoardo Currà, Antonio Fioravanti, Wei Yan (accepted for publication 2025)
" New Frontiers in Built Heritage Management: AI assistant for advanced data integration and building information retrieval" CAADRIA 2025.

Zuxing Wang, **Cassia De Lian Cui**, Bo Li, Francesca Giofrè, Edoardo Currà, Yakai Lei (accepted for publication 2024)
"Study on the Distribution of Environmental Factors in Urban Parks from the Perspective of Public

Health" 6oth IFLA (*International Federation of Landscape Architects*) World Congress . 4-6 September 2024, Istanbul, Union of Turkish Architects and Engineers (UCTEA), Chamber of Turkish Landscape Architects (CTLA).

Cui Cassia De Lian, Cursi Stefano, Simeone Davide, Fioravanti Antonio, Currà Edoardo
" Integrating HBIM and Information Ontologies for enhanced management of layered archaeological sites" New Frontiers of Construction Management Workshop 2024. (Accepted for publication 2024).

Cui Cassia De Lian, Edoardo Currà, Antonio Fioravanti, Wei Yan (2024)
"AI-Powered Built Heritage: Enhancing Interpretation and Recovery processes with Generative AI Models" Proceedings of International Conference Reuso 2024 - Documentation, restoration, and sustainable regeneration of the built heritage.

Cui Cassia De Lian, Cursi Stefano, Simeone Davide, Fioravanti Antonio, Currà Edoardo
"An Ontology-Driven Approach for Geometry Segmentation and Interpretation in Architectural Heritage/archaeology"eCAADe 2024 -Proceedings of the 42st eCAADe Conference Data-Driven Intelligence, University of Cyprus, Nicosia, Cyprus.

Cui Cassia De Lian, Cursi Stefano, Simeone Davide, Fioravanti Antonio, Currà Edoardo
"Industrial archaeologies of complex palimpsests. Application of semantic web technologies to digitalise the knowledge path from data to interpretation." Colloquiate 2024 Architettura Tecnica in Italia e nel mondo esperienze a confronto, Università degli Studi di Palermo.

Cui Cassia De Lian, Simeone Davide, Cursi Stefano, Fioravanti Antonio, Currà Edoardo
'Modelling and managing Built Heritage Knowledge: an ontology-based approach for multi-layered Archaeologies and historical Production Process representation' CONVR 2023 -Proceedings of the 23° International Conference on Construction Applications of Virtual Reality, University of Florence.

Cui Cassia De Lian, Simeone Davide, Cursi Stefano, Fioravanti Antonio, Currà Edoardo
'Knowledge Modeling and Fuzzy Ontologies Integration for Classical and Industrial Archaeologies' eCAADe 2023 -Proceedings of the 41st eCAADe Conference Digital Design Reconsidered, Graz University of Technology.

Cui Cassia De Lian, Simeone Davide, Cursi Stefano, Bortoletto Simone, Fioravanti Antonio, Currà Edoardo
Tecnologia e Conoscenza digitali per il Patrimonio Archeologico Industriale' Colloqui.At.e 2023 IN TRANSIZIONE Opportunità e Sfide per l'Ambiente Costruito, Politecnico di Bari.

Currà Edoardo, Russo Martina, Severi Laura, **Cui Cassia De Lian**
'Macchina, Fabbrica e Progetto. Convergenze disciplinari per il recupero del Palazzo-Fabbrica della Zecca di Roma' Colloqui.At.e 2023 IN TRANSIZIONE Opportunità e Sfide per l'Ambiente Costruito, Politecnico di Bari.

Currà Edoardo, Russo Martina, Severi Laura, **Cui Cassia De Lian**, Leonardi Pasquale
'Verso il censimento e la catalogazione dei beni industriali del comune di Roma. Una mappatura georeferenziata online per l'esplorazione virtuale' in Stati Generali del Patrimonio Industriale, a cura di Edoardo Currà, Marina Docci, Claudio Menichelli, Martina Russo e Laura Severi, Venezia Marsilio Editori 2022.

Cappuccitti Antonio, **Cui Cassia De Lian**
'Sistemi industriali fluviali. Il caso di Chongqing tra strategie e scenari di intervento' in Stati Generali del Patrimonio Industriale, a cura di Edoardo Currà, Marina Docci, Claudio Menichelli, Martina Russo e Laura Severi, Venezia: Marsilio Editori 2022.

January 13, 2025