Curriculum vitae

## PERSONAL INFORMATION

# Elisabetta Colucci

📍 Statuto 12, 10122 Torino (TO) (Italy)

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✉ elisabetta.colucci@polito.it

💬 Skype betty.colucci

Sex Female | Date of birth 22/04/1991 | Nationality Italian

## POSITION

**PhD Student in Urban and Regional Development**

## WORK EXPERIENCE

**11/2018–Present**

### PhD Student in Urban and Regional Development
Politecnico di Torino
Corso Duca degli Abruzzi, 24, 10129 Torino (Italy)

DIATI - Department of Environment, Land and Infrastructure Engineering

Cycle: 34
Phd candidate ID number: 264060
Faculty/Staff member ID number: 41312
ICAR 06 - Topography and Cartography

Supervisor: LINGUA ANDREA MARIA

Co-supervisors: SPANO' ANTONIA TERESA - KOKLA MARGARITA

- I work in the field of Geomatics. One of the topic of my research is the study of ontologies for spatial and geographical data. It's nowadays recognized how this could really fulfil the dissimilarities between different disciplinary languages. Ontologies are very useful to create a common language to ensure semantic interoperability, with the purpose to create a unique and standard thesaurus, that will let different discipline to talk together. Ontologies allow the clarification and deepening of different systems and web DB (database) concepts; moreover, they could produce an accurate representation of the reality to support land and urban management and CH valorisation.

Business or sector Research

**09/2019–03/2020**

### University teaching assistant
Politecnico di Torino
Corso Duca degli Abruzzi 24, 10129 Turin (Italia)

- TA at Modellazione di spazi urbani e GIS, prof. Antonia Spanò, Corso Di Laurea Magistrale In Architettura Per Il Progetto Sostenibile - Torino

Business or sector Education

**08/2019–03/2020**

### University teaching assistant
Politecnico di Torino
Corso Duca degli Abruzzi 24, 10129 Turin (Italia)

▪  TA at Cartografia Numerica e GIS, prof. Andrea Lingua, Corso Di Laurea Magistrale In Ingegneria Edile - Torino

Business or sector Education

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|---|---|
| 10/2018–03/2019 | **Teaching Assistant** |

Politecnico di Torino
Corso Duca degli Abruzzi, 24, 10124 Turin (Italy)
www.polito.it

▪  TA at Laboratory of Geomatics for Architecture modeling (prof. Filiberto Chiabrando), 2nd year of Bsc, Architecture. (2018/2019).

Business or sector Education

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|---|---|
| 12/2017–11/2018 | **Research Fellow** |

Politecnico di Torino
Corso Duca degli Abruzzi, 24, 10129 Torino (Italy)

*RESCULT project -* https://www.rescult-project.eu

▪  The overall objective of RESCULT is to enhance the capability of Civil Protection (CP) to prevent and mitigate impacts of disasters on sites of Cultural Heritage (CH). This will be done through the realization of an integrated European Interoperable Database (EID) for CH, designed to provide a unique framework for CP, national Ministries of CH, the European Union (EU), local authorities. Moreover, RESCULT will provide a disaster risk reduction strategy identifying tailored actions and investments to improve both prevention and resilience capacities.

Within this project my work focused on the generation of a Conceptual Model, linking, through standards of spatial information (CityGML and INSPIRE), several kinds of CH to their related risks. Moreover, I cared of the data collection of the analysed study cases, for the population of a database, its connection with GIS and its web visualisation.

Business or sector Research

**05/2017–11/2017**    **Scholarship researcher**

Politecnico di Torino
Corso Massimo D'Azeglio, 43, 10126 Torino (Italy)
www.polito.it

DAD - Department of Architecture and Design

- Design of three-dimensional image based models and 3D database for risk management and use of open-source systems for the creation of a WEB-GIS system to analyse of the resilience of Cultural Heritage.

Business or sector Research

**09/2016–10/2016**    **Curricular Intership**

Politecnico di Torino
Corso Massimo D'Azeglio, 43, 10126 Torino (Italy)
www.polito.it

*Geomatics for Cultural Heritage Laboratory*

- I get a curricular internship in the Laboratory of Geomatics for CH (Cultural Heritage) of DAD; thanks to Geomatics, which can support every technical, scientific, administrative and political operations of a territory, a city or a building can be represented and transmitted. During this training I learnt some survey and computer vision methods that, more and more, help stakeholders to study the relationships between the physical reality of territories and CH.
- Integrated 3D metric survey: terrestrial and aerial photogrammetry. Terrestrail Lidar. GPS-GNSS techniques, Total Station.
- Post-processing with software: pSCENE; Agisoft PhotoScan; Context Capture - Bentley, Point-Cab; Pix4D; Photoscan; MicMac.

Business or sector Geomatics

**04/2014–10/2014**    **Post Graduated Internship**

Daniela Moro (architect)
Via Piemonte, 11, 10090 Castagneto Po (Italy)

- Territorial and Urban Projects and city Survey.

Business or sector Architecture

**01/2014–03/2014**    **Curricular Intership**

Techincal Office Sandro Capella

- DIA, SCIA, Building Permits, Sanatoria. Energy Certification (ACE) with the Termus software. Drawing up a PEC and a 3D model with Archicad.

Business or sector Architecture

### EDUCATION AND TRAINING

**03/2017**    Master Degree in Architecture for Sustainable Design

Politecnico di Torino

Honors Thesis

https://webthesis.biblio.polito.it/5989/2/Colucci_abstract_en.pdf

▪ Colucci, E., (2017). *Architecture and nature of archaeological landscapes. Spatial analysis integrated into the WEB-GIS for storing and communicating historical memory: The Archaeological Mine Park of San Silvestro.* Msc thesis, Politecnico di Torino, tutors, A. Spanò, F. Chiabrando, D. Brocchini, F. Noardo.

*Degree class LM-4: Architecture and architectural engineering.*

02/2014          Bachelor Degree in Architecture
Politecnico di Torino
*Degree class L-17: Architecture.*

06/2010          Scientific High School Diploma
Liceo Scientifico "8 marzo", Settimo Torinese (TO) (Italy)

## PERSONAL SKILLS

| Mother tongue(s) | Italian |
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**Foreign language(s)**

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---|---|---|---|---|---|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | B2 | B2 | B2 | B2 | B2 |
| | IELTS Academic B2 My English Course (from January 2018 to January 2020) | | | | |
| Spanish | B1 | B1 | B1 | B1 | A1 |
| Greek | A1 | A1 | A1 | A1 | A1 |
| | Greek Course promoted by NTUA (Nationa Technical University of Athens) | | | | |

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages - Self-assessment grid

**Organisational / managerial skills**

▪ I joined **Team DIRECT** (DIsaster RECovery Team) of Politecnico di Torino, which works in order to document and study cultural, built, archaeological and natural heritage in the field of 3D Metric survey, cartography and WebGIS systems on every level of Disaster Management, from environmental vulnerability analysis to immediate response to emergencies and post-disaster survey.
http://areeweb.polito.it/direct/

▪ **Volunteer Abroad Experience**

December, January 2011 – Santhiago del Chile, Chile -  Associazione Papa Giovanni XXIII

**Job-related skills**

GIS analysis

WebGIS

Design of Spatial Database

3D city models

Ontologies

**Digital skills**

| SELF-ASSESSMENT | | | | |
|---|---|---|---|---|
| Information processing | Communication | Content creation | Safety | Problem-solving |
| Proficient user | Proficient user | Proficient user | Proficient user | Proficient user |

Digital skills - Self-assessment grid

| European Computer Driving Licence (ECDL) Introduzione al Python: Deep Learning for beginners |
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▪ GIS software (QuantumGIS, GrassGIS, ArcGIS)

▪ Object-relational and spatial database system (PostgreSQL, PostGIS)

▪ WebGIS server (GeoServer, GeoNode, OpenLayers)

▪ Photogrammetry suites (Photoscan, Pix4D)

▪ Management of point clouds acquired using photogrammetry and LiDAR techniques (PointCab, Scene)

▪ 3D modeling and analysis (3DReshaper, CloudCompare)

▪ Python (beginner)

▪ Ontologies and semantic web (Protègè - WebVOWL)

▪ Topographic survey for the evaluation of the accuracy of 3D models

- CAD (AutoCAD)
- Microsoft Office
- 3D modelling and render (3D Studio Max, SketchUp)
- Adobe (Photoshop, Illustrator, Indesign)

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| Driving licence | B |

## ADDITIONAL INFORMATION

**Honours and awards**

Awards *Espace Innovation* 2017

Promoted by the Valle d'Aosta Autonomous Region and by the Department for economy, energy, labor policies and the environment, in collaboration with the Pépinière d'entreprises incubator in Aosta.

**UAV (Unmanned Aerial Vehicle) Pilot Licence**

Released according to the UAV Regulation (Regolamento Mezzi Aerei a Pilotaggio Remoto)

Licence Number: *I.APRA.005279*

Scuola AlphaLima Aviation - Moncalieri (TO)

**Master thesis**

- Colucci, E., (2017). Architecture and nature of archaeological landscapes. Spatial analysis integrated into the WEB-GIS for storing and communicating historical memory: The Archaeological Mine Park of San Silvestro. Msc thesis, Politecnico di Torino, tutors, A. Spanò, F. Chiabrando, D. Brocchini, F. Noardo.

**Publications - Journal Papers**

- Brocchini, D., Chiabrando, F., Colucci, E., Sammartano, G., Spanò, A., Teppati Losè, L., Villa, A. (2017), THE GEOMATICS CONTRIBUTION FOR THE VALORISATION PROJECT IN THE ROCCA OF SAN SILVESTRO LANDSCAPE SITE, vol. XLII-5/W1, pp. 495-502. - ISSN 2194-9034, availa ble at https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLII-5-W1/495/2017/.

- Calantropio, A., Colucci, E., and Teppati Losè, L. (2017). RAPID MAPPING FOR BUILT HERITAGE AT RISK USING LOW-COST AND COTS SENSORS. A TEST IN THE DUOMO VECCHIO OF SAN SEVERINO MARCHE, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLII-2/W8, 59-66, available at  https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLII-2-W8/59/2017/.

- Chiabrando, F., Colucci, E., Lingua, A., Matrone, F., Noardo, F., Spanò, A. (2018). A EUROPEAN INTEROPERABLE DATABASE (EID) TO INCREASE RESILIENCE OF CULTURAL HERITAGE, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLII-3/W4, 151-158, available at  https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLII-3-W4/151/2018/.

- Colucci, E., Chiabrando, F., Spanò, A. (2018), Spanò, A.. WEBGIS TOOLS TO DISSEMINATE ARCHAEOLOGICAL LANDSCAPE MEMORY. Rivista Territorio Italia n. 2/2017 ENG, available at https://www.agenziaentrate.gov.it/wps/file/Nsilib/Nsi/Agenzia/Agenzia+comunica/Prodotti+editoriali/Pubblicazioni+cartografia_catasto_mercato_immobiliare/Territorio_Italia/Territorio+Italia+2+2017+EN/WebGIS+tools+Colucci/3+Colucci.pdf

- Colucci, E., Noardo, F., Matrone, F., Spanò, A., Lingua, A., 2018. High-Level-Of-Detail Semantic 3D GIS for Risk and Damage Representation of Architectural Heritage, available at https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLII-4/107/2018/isprs-archives-XLII-4-107-2018.pdf

- Chiabrando, F., Colucci, E., Lingua, A., Matrone, F., Noardo, F., Spanò, A., Migliorini, M., Moretti, F.,

Olivero, S., 2018. Un database europeo per migliorare la resilienza dei beni culturali agli eventi catastrofici. IN ASITA Italian National Conference, pp. 313 - 320.

▪ Matrone, F., Colucci, E., De Ruvo, V., Lingua, A., and Spanò, A., 2019. HBIM IN A SEMANTIC 3D GIS DATABASE, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLII-2/W11, 857-865, https://doi.org/10.5194/isprs-archives-XLII-2-W11-857-2019.

▪ Colucci, E., De Ruvo, V., Lingua, A., Matrone, F., Rizzo, G., 2020. HBIM-GIS Integration: From IFC to CityGML Standard for Damaged Cultural Heritage in a Multiscale 3D GIS. In: APPLIED SCIENCES. - ISSN 2076-3417. - ELETTRONICO. - 10:4(2020), pp. 1-20.

▪ Pontoglio, E., Aicardi, I., Calantropio, A., Colucci, E., Di Pietra, V., Grasso, N., Lingua, A., Maschio, P., 2020. UAV data acquisition and analysis for a Cultural Landscape Heritage: the emergency area of the Vallone d'Elva. Prospettive Multiple. Studi di Ingegneria, Architettura e Arte. (Intervento presentato al convegno D-SITE 2020). IN PRESS.

▪ Pontoglio, E., Colucci, E., Lingua, A., Maschio, P., Migliazza, R., Scavia, C., 2020. UAV AND CLOSE-RANGE PHOTOGRAMMETRY TO SUPPORT GEO-MECHANICAL ANALYSIS IN SAFETY ROAD MANAGEMENT: THE "VALLONE D'ELVA" ROAD. International Archives of The Photogrammetry, Remote Sensing and Spatial Information Sciences. - ISSN 2194-9034. IN PRESS.

▪ Colucci, E., Kokla, M., Mostafavi, M.A., Noardo, F., Spanò, A., (2020). Semantically Describing Urban Historical Buildings Across Different Levels of Granularity. International Archives of The Photogrammetry, Remote Sensing and Spatial Information Sciences. IN PRESS.

**Other (papers under-review, conferences abstract, thesis)**

▪ Spanò, A., Sammartano, G., Colucci, E., Aicardi, I., 2019. Il paesaggio dell'industria del cemento nel Monferrato casalese: documentazione digitale tramite strumenti GIS e modelli 3D densi per la valorizzazione integrata.

▪ Chiabrando, F., Colucci, E., Lingua, A., Matrone, F., Noardo, F., Spanò, A., Migliorini, M., Moretti, F., Olivero, S., 2018. Un database europeo per migliorare la resilienza dei beni culturali agli eventi catastrofici. IN SIFET Italian National Conference.

▪ Olivero, S., Migliorini, M., Moretti, F., Lingua, A., Matrone, F., Colucci, E., Chiabrando, F., Spanò, A., Norado, F., 2019. The RESCULT project: a new European Interoperable Database for improving the resilience of Cultural Heritage subject to disasters. In GLOBAL ASSESSMENT REPORT ON DISASTER RISK REDUCTION 2019.

▪ E. Colucci, F. Mantello, G. Sammartano, A. Spanò, 2019. Approcci GIS ed HBIM integrati per l'analisi del patrimonio paesaggistico. In ASITA 2019.

▪ Belcore, E., Colucci, E., Aicardi, I., Angeli, S., 2020. Analisi, classificazione e visualizzazione di dati UAV ad alta risoluzione spaziale e spettrale con l'utilizzo di FOSS. Contributo in Atti di Convegno FOSS4G Italia (2020), pp. 31-32. Intervento presentato al convegno FOSS4G Italia 2020 tenutosi a Torino nel febbraio 2020.

▪ Rizzo, G., Colucci, E., Lingua, A., 2020. Soluzioni FOSS per l'HBIM: interoperabilità con soluzioni commerciali. Contributo in Atti di Convegno FOSS4G Italia 2020, pp. 69-69. Intervento presentato al convegno FOSS4G Italia 2020 tenutosi a Torino nel febbraio 2020.

▪ *Co-tutor thesis*: P. Pasqualini, Costruzione di un GIS 3D per la rappresentazione delle aree terremotate a scala urbana. Rel. A. M. Lingua, E. Colucci, F. Matrone. Politecnico di Torino, Corso di laurea magistrale in Ingegneria Edile., 2019.

▪ *Co-tutor thesis*: G. Rizzo, Nuvole di punti per la modellazione multiscala di beni culturali soggetti a rischio sismico - Point clouds for multi-scale modeling of cultural heritage affected by seismic riskA. M. Lingua, E. Colucci, F. Matrone. Politecnico di Torino, Corso di laurea magistrale in Ingegneria Edile., 2019.

**Projects and Benchmarks participation**

▪ Main10nance Project. Politecnico di Torino e Sacri Monti.

▪ Turin 1991 Project. Politecnico di Torino and UCSanDiego.

▪ Benchmark participation: SIFET 2019 – Underwater photogrammetry. "Fotogrammetria subacquea: potenzialità e problematiche".

▪ Benchmark participation: GeoBIM benchmark 2019. TU-Delft, 3Dgeoinfo.

▪ MAIN10NANCE - I Sacri Monti: patrimonio comune di valori, laboratorio per la conservazione sostenibile ed una migliore fruibilità turistica dei beni culturali.

▪ INNOV ALPIMED – INTERREG ALCOTRA - Ottimizzare l'utilizzo della risorsa idrica e l'efficientamento energetico per l'innevamento artificiale sulle piste da sci.

**Conferences**

▪ Geo Delft Conference 2018. **13th 3D GeoInfo Conference**: October 1-2, 2018, Delft, The Netherlands.

▪ Geo Delft Conference 2018. **ISPRS Technical Commission IV Symposium 201**8. 3D Spatial Information Science - The Engine of Change. October 1 - 5, 2018, Delft, The Netherlands.

▪ E**uropean Forum on Disaster Risk Reduction 201**8. November 21-23, 2018, Rome, Italy.

▪ 8th edition of the **3D ARCH workshop 2019**. February 6 -8, 2019. Bergamo, Italy.

▪ **FOSS4G-IT**. February 20 - 22, 2019. Padova, Italy.

▪ **GEORES**. Geomatics And Restoration. May 8-10, 2019. Milan, Italy.

▪ ISPRS GeospatialWeek | **UavG**. June 10 – 12, 2019.

▪ ISPRS GeospatialWeek | **Semantics 3**D. June 10 – 11, 2019.

▪ 64° **Convegno Nazionale SIFET**. Geomatica In Condizioni Complesse. June 19 – 21, 2019, Venice.

**Workshop and Courses**

▪ Earth climate and climate change - Politecnico di Torino.

▪ Geomatics and GIS for environmental application and regional planning - Politecnico di Torino.

▪ New public management and cultural heritage - Politecnico di Torino.

▪ Principi di modellazione basati su risorse web: dai panoramici sferici all'HBIM - Politecnico di Torino.

▪ Semantic Web - Politecnico di Torino.

▪ Statistical data processing - Politecnico di Torino.

▪ Etica informatica - Politecnico di Torino.

▪ Writing Scientific Papers in English - Politecnico di Torino.

▪ Public speaking - Politecnico di Torino.

▪ Python Seminar. Deep learning for beginners. Deep learning practical examples. December 12 - 14, 2018. Ancona, Italy.

▪ Workshop - Capacity Building for High-Resolution Land Cover Intercomparison and Validation, October 1, 2018. Delf, The Netherlands.

▪ Workshop - OpenStreetMap Mapathon, October 1, 2018. Delf, The Netherlands.

▪ Workshop - Introduzione a PostgreSQL e PostGIS. February 19, 2019. Padova, Italy.

▪ Workshop - Pubblicazione di dati con QGIS Server e Lizmap. February 19, 2019. Padova, Italy.

▪ Workshop - Introduzione a PostgreSQL e PostGIS. 4/2019. Padova, Italy.

▪ Workshop - Pubblicazione di dati con QGIS Server e Lizmap. 4/2019. Padova, Italy.

▪ Pre-course Seminar EduServ17 – EUROSDR. Barcelona, 3/2019.

▪ EUROSDR Course – 3D Sensing, Scene Reconstruction and Semantic Interpretation (e-learning

course)

- EUROSDR Course- Open Spatial Data Infrastructures (e-learning course)

- Geospatial Web Service Technologies: Online Sharing of Geospatial Data, Algorithms and Models. 6/2019, Enschede, The Netherlands.

- Workshop 2GG SIFET 2019 – HBIM & Sistemi di rifermento, 6/2019, Venice, Italy.

Seminars

- November 29. ResCult. I User Forum. Venice, Italy.

- October 19, 2018. ResCult - "2nd Training session", Turin, Italy.

- November 21 -23 , 2018. ResCult. III User Forum. Rome, Italy.

- November 6 - 9, 2018. ResCult. "3rd Training session", Quinson, France.

Memberships

- Team **DIRECT**, DIsaster RECovery Team. Politecnico di Torino.

- **CAI**. Club Alpino Italiano

Self-declaration affidavit (Dichiarazione sostitutiva dell'atto di notorietà) according to art. 47 and art.19 of D.P.R. n. 445/2000

I, the undersigned ELISABETTA COLUCCI,

aware of the consequences of making false statements, falsehood of acts and use of false facts, punishable by law according to art. 76 D.P.R. n. 445/2000 and art. 496 of the Italian Penal Code, under my own responsibility, declare that the information contained in this curriculum vitae, in the European format, are true.

Processing of personal data

In compliance with the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize the recipient of this document to use and process my personal details for the purpose of recruiting and selecting staff and I confirm to be informed of my rights in accordance to art. 7 of the above mentioned decree.