curriculum vitae

PERSONAL INFORMATION

Surname	**Fascia**
Name	**Rebecca**
Address	
Telephone	
Fax	
E-mail	
Skype	

Nationality	
Date of birth	

Education and training

• Date (from – to)	September 2020 - Dicember 2022
• Name and type of organisation providing education and training	Politecnico di Milano
Duration of the program of study	2 years
• Principal subjects/occupational skills covered	**Design, conservation and enhancement of existing and new heritage** Conservation and enhancement of the historical architectural heritage, Survey and control of the built environment, Diagnostic analysis, Photogrammetry, Material-pathological assessment of the existing heritage and possible conservation interventions, Risk analysis for spatial planning, Economic evaluation of projects, Design and structural adaptation of buildings in high-risk contexts, Life cycle analysis of a building, Project management and planning (BIM management)
• Title of qualification awarded	Master of Science in Building Architecture
Final mark obtained	110/110

graduation thesis

Title	HANGAR$_2$O. The storage of lake Iseo's traditions
Language	Italian
Supervisor	Professor Stefano Guidarini
Thesis Summary	The thesis deals with a project for the re-functionalization and enhancement of the territory and existing site on the Montecolino peninsula on Lake Iseo. The story of the Montecolino d'Iseo

peninsula is a military secret, or at least it has been like this. The south-eastern shore of the Sebino, in the stretch of coast connecting Iseo and Pilzone, hides a small private promontory in a state of neglect, where vegetation has taken over the anthropic traces. The face of Montecolino, a nineteenth- century bourgeois living room, is opposed first by its intended uses over time, fist military and then industrial. Caproni seaplanes, mini- submarines, secret encounters. The shores of Lake Iseo were the protagonists of this too.

Today, there are about ten buildings on the peninsula, mainly located in an intermediate band between the Brescia-Edolo railway line and a wooded promontory overlooking the lake. The volumes have a strongly heterogeneous nature, due to the historical periods and the reasons behind their construction.

The intervention tries to keep together two environments, earth and water, and two stairs, the one of the site and the one of Sebino. These premises outline several design dimensions: a natural dimension aimed at enhancing the landscape potential of the site, a cultural dimension that preserves the historical traces of the place, a productive dimension that preserves the local artisan tradition, and a social dimension that gives a public character to the area. The skeletons of the buildings of the Caproni Factory, symbol of the Montecolino of the 1930s, are transformed, becoming containers of the traditions of the lake in this new phase of life. The project sees the peninsula as a collector of the culture of the Sebino, of its productions and activities: a postcard of the lake offers, and a starting point for its discovery, by land, by water and by air.

Education and training

• Date (from – to)		September 2017-September 2020
• Name and type of organisation providing education and training		Politecnico di Milano – Piacenza Campus
Duration of the program of study		3 years
• Principal subjects/occupational skills covered		**Land planning and design architecture** Territorial design (master plan), Context analysis and design evaluations, Design of new buildings, Land development, Conservation and enhancement of the historical architectural heritage, Photogrammetry, Awareness of the fundamentals of conservation, Basic knowledge of statics, Knowledge of the history of architecture and urban planning, Review of the fundamentals of representation
• Title of qualification awarded		Bachelor of Science in Architectural Design
Final mark obtained		110/110

graduation thesis

Title		**La città delle macerie. Neorealist cinema and italian reconstruction**
Language		Italian
Supervisor		Professor Maria Vittoria Capitanucci
Thesis Summary		The thesis traces the post-war years between destruction and rebuilding, between misery and rebirth, between past and future. The period after the Second World War saw the birth of one of the most important Italian cultural currents: Neorealism. By analyzing this movement in cinematography, the most relevant novelty is the recovery of real urban spaces annihilated and degraded due to war, which in turn represent the alienation of the narrated characters. This makes the population aware of what has happened, especially the political reasons that led to complete physical and spiritual destruction. Filming the bombed cities becomes a representation of the soul of man, who experienced the devastation of war and matured new ideals. Resistance, work, rebirth. During the same years, the need to rebuild Italy physically and economically arose. The Italian rebuilding, through plans such as Ina- Casa, represents a national innovation, which distributes housing to the poorest population and work to real estate companies, allowing the economic system to restart. This reform takes as a unit of study the district, which represents the post-war "public city", a meeting place that encompasses public and private. For Italian urban planners and architects, it finally presents the first real opportunity to give shape to the discontinuous and rapid expansion of the Italian cities typical of that period. The aim of this thesis is to retrace the post-war years in Italy, in which cinema and architecture participated in the economic and physical reconstruction of the country, by analyzing its characteristics and aims, innovations and disappointments.

publications and articles submitted

Author(s) and title	Gaspari F., Barbieri F., Fascia R.,. Ioli F, Toscani V., Pinto L. *"Potree platform for infrastructure inspection: una soluzione WebGL open-source a supporto del rilievo e dell'analisi difettologica di ponti e viadotti"*
Language	Italian
Submitted to	International Conference: Geodaysit 2023
Date of Conference	12 - 17 June 2023

Author(s) and title	F. Gaspari, F. Barbieri, J. P. Duque, R. Fascia, F. Ioli, G. Zani, D. Carrion, L. Pinto *"A Geo-database for 3D-aided multi.epoch documentation of bridge inspections"*
Language	English
Submitted to	International Conference: Egypt GSW2023
Date of publication	2 - 7 September 2023 (in print ISPRS Archives)

conference participation as speaker

Speaker(s)	Fascia R., Gaspari F
Presentation	*Potree platform for infrastructure inspection: una soluzione WebGL open-source a supporto del rilievo e dell'analisi difettologica di ponti e viadotti*
Language	Italian
Conference	International Conference: Geodaysit 2023
Date of Conference	16 June 2023

certifications

First Certificate in English (TOEIC)	26/08/2020 – 760 (Level B2)
Italian Driving License	14/07/2017 – B

Work experience, stages, studies abroad

• Date (from – to)	April 2023 - July 2023
• Name and address of firm/university	Politecnico di Milano, Piacenza Campus, Via Scalabrini 113, 29121 Piacenza, IT
• Type of business or sector	Education - University
• Type of employment	**Teaching Assistant and Tutor**
• Main activities and responsibilities	Teaching assistant for the course "Tecniche di Rilievo e Modellazione 3D per l'Architettura" by Professor Livio Pinto (Piacenza Campus) with particular interest in the use of Agisoft Metashape, CloudCompare photogrammetric software and AutoCad.

• Date (from – to)	March 2022 – November 2022
• Name and address of firm/university	Resmini Engineering s.r.l, Via Riglio 16, Piacenza, IT
• Type of business or sector	Design architecture - Engineering studio
• Type of employment	**Technical collaboration**
• Main activities and	Design activities, surveying, redrawing cadastral documents with AutoCad, economic evaluation

responsibilities		of projects, making drawings for construction practices (SCIA, CILA, CILAS..)

• Date (from – to)		November 2021 - January 2022
• Name and address of firm/university		23bassi studio di architettura, Via Angelo Fava, 9, 20125 Milano, IT
• Type of business or sector		**Curricular internship**
• Type of employment		Interior design
• Main activities and responsibilities		During the internship period, it was possible to learn different notions in distinct areas such as interior architecture, design and the life cycle of a building. The activities involved interior design, custom furniture drawings, furniture selection, power point presentations to be shown to the client to exhibit the project, store fitting, redesign of facades, economic evaluation of the project, and creation of 3D models for renderings.

• Date (from – to)		September 2021 - January 2022
• Name and address of firm/university		Politecnico di Milano, Piacenza Campus, Via Scalabrini 113, 29121 Piacenza, IT
• Type of business or sector		**University internship**
• Type of employment		Teaching Assistant
• Main activities and responsibilities		Collaboration with Professor Maria Vittoria Capitanucci: assistance in making presentations for History of Architecture 2 course and conferences, archival historical research.

Personal skills and competences *Acquired in the course of life and career but not necessarily evidenced by formal certificates and diplomas.*	

Mother tongue	Italian

Other language(s)	

	English
• reading	B2
• writing	B2
• speaking	B2

Social skills and competences	**Teamwork, flexibility** and **adaptability**: Collaborated in different groups during my architecture studies at Politecnico, demonstrating the ability to work effectively with others and adapt to different situations. **Leadership**: Organised events for my class during my undergraduate studies and contributed to AVIS events in Piacenza, demonstrating leadership and the ability to take initiative. **Creativity**: Utilised my architectural background, combined with a passion for art and travel, to bring innovative and creative ideas to projects. **Emotional intelligence** and **empathy**: Developed emotional intelligence and empathy while working with educators at a summer centre in Piacenza (Centro Estivo, Istituto Sant'Eufemia, Piacenza), providing support and care for primary school children.

Organisational skills and competences	**Critical Thinking**: Developed through scientific study, leisure activities such as reading and watching films, and extensive travel, I have critical thinking skills. **Problem solving**: Applied during my architecture studies at Politecnico, especially in organising AVIS events. **Time Management**: Coordinate university, work, volunteering and sporting activities, demonstrating time management skills. **Active learning**: Cultivated through years of practising karate and participating in competitive and uncompetitive events abroad (Switzerland, Germany, France).

Technical skills and competences	**CAD, BIM, GIS:** AutoCAD, Revit, Archicad, QGIS **Photogrammetry:** Agisoft Metashape, CloudCompare, Recap, Potree **Editing, presentation, and graphics:** Adobe Creative Suits (Photoshop, Illustrator, InDesign); **Microsoft Office Suite** (Word, Excel, PowerPoint) **OS:** Windows

Artistic skills and competences	Interest in art, architecture, music and cinema. Guitar player since elementary school.

Other skills and competences	Swimmer, karateka, volunteer

Additional information	

annexes		- Fascia R., Franzini A., Pasotti S. (2023). *HANGAR₂O. The storage of lake Iseo's traditions* [Master's Degree Thesis], Politecnico di Milano https://polimi365-my.sharepoint.com/:f:/g/personal/10608705_polimi_it/EtZtUzvrl_BDIQdorGFs2 60B_G1StGxql5T6zPlip_2_4A?e=nieBlb - Gaspari F., Barbieri F., Fascia R.,. Ioli F, Toscani V., Pinto L. (2023). *Potree platform for infrastructure inspection: una soluzione WebGL open-source a supporto del rilievo e dell'analisi difettologica di ponti e viadotti.* Abstract submitted for the International Conference Geodaysit 2023 - Theses abstracts

Potree platform for infrastructure inspection: una soluzione WebGL open-source a supporto del rilievo e dell'analisi difettologica di ponti e viadotti

F. Gaspari [1], F. Barbieri [1], R. Fascia [1], F. Ioli [1], V. Toscani[2], L. Pinto [1]

[1] Dipartimento di Ingegneria Civile e Ambientale (DICA), Politecnico di Milano, Milan, Italy – (federica.gaspari, federico2.barbieri, rebecca.fascia, francesco.ioli, livio.pinto)@polimi.it

[2] Servizi Informativi Territoriali, Provincia di Piacenza, Piacenza, Italy - valeria.toscani@provincia.pc.it

La necessità di ispezioni mirate alla documentazione delle condizioni di ponti e viadotti evidenzia l'importanza di individuare strumenti per la condivisione ed elaborazione efficace di prodotti 3D georeferenziati, tramite tecnologie WebGL flessibili, personalizzabili e accessibili anche da utenti non specializzati. In particolare, Potree (Schütz, 2016), libreria JavaScript open-source, permette l'esplorazione di nuvole di punti e mesh a supporto di procedure decisionali per la manutenzione e il monitoraggio delle infrastrutture stradali (Gaspari et al., 2022).

In questo contesto si è articolata la collaborazione con le province di Piacenza e di Brescia con lo sviluppo di piattaforme web personalizzate per l'esplorazione di modelli 3D georiferiti di ponti rilevati tramite laser scanner e fotogrammetria da drone. Lo studio si è focalizzato in particolare sull'identificazione e implementazione in ambiente Potree di funzioni utili sia alla documentazione della geometria del ponte che alla compilazione di schede difettologiche, come richiesto dalle "Linee guida per la classificazione e gestione del rischio, la valutazione della sicurezza ed il monitoraggio dei ponti esistenti" del Ministero delle Infrastrutture e dei Trasporti (MIT, 2020).

In risposta alle necessità degli enti gestori, è stata quindi definita una struttura standard per la piattaforma web condivisibile, Potree platfOrm for iNfrasTructure Inspection (PONTI), comprendente 3 funzionalità essenziali personalizzabili: visualizzazione della nuvola di punti della struttura rilevata, caricamento delle immagini orientate sul modello, posizionamento di annotazioni in corrispondenza di elementi significativi della struttura. Il template e le sue istruzioni sono liberamente accessibili in un repository Github dedicata (https://github.com/labmgf-polimi/ponti).

L'inserimento nel Web viewer di Potree della nuvola di punti, sia in visualizzazione RGB che classificata per elementi strutturali, permette di utilizzare funzionalità di misurazione di coordinate, lunghezze e superficie utile sia alla compilazione di schede di censimento di Livello 0 che di attributi del livello "Ponti e Viadotti" del Catasto Strade provinciale. Attraverso opportune modifiche avanzate del codice JavaScript di Potree è inoltre possibile integrare funzionalità di filtraggio della visualizzazione della nuvola per elemento strutturale di interesse.

L'integrazione di immagini ad alta risoluzione acquisite da drone e opportunamente orientate rispetto al modello 3D permette di definire una modalità immediata e intuitiva per l'identificazione sia qualitativa che quantitativa dei difetti riscontrabili e della loro localizzazione sulla struttura, come la presenza di infiltrazioni o di fessure (Ioli et al., 2022). Tale funzionalità si rivela particolarmente efficace in caso di ponti con difficoltà di accesso al sito del rilievo, permettendo un'accurata ispezione visiva della struttura anche a posteriori.

Infine, l'utilizzo di annotazioni ed etichette posizionate in corrispondenza di elementi strutturali di interesse comporta una più immediata identificazione di componenti critiche del ponte. Un'ulteriore personalizzazione di questa funzionalità rende possibile anche l'integrazione di azioni attivabili con click, inserendo nel modello Potree cambi di prospettiva o collegamenti diretti ad archivi esterni per facilitare il download diretto di dati raccolti sul campo (es. immagini originali, nuvola di punti etc.) e la loro associazione a schede di censimento come richiesto dalle Linee Guida.

In conclusione, le funzionalità base del template forniscono un ambiente web user-friendly per l'esplorazione del dato 3D e soprattutto per la sua valutazione condivisa, senza richiedere il download locale di software dedicati né competenze avanzate di manipolazione del dato.

Esempio di Potree implementato per la Provincia di Piacenza: https://labmgf.dica.polimi.it/piacenzacs/lugagnano/

Bibliografia

Gaspari, F., Ioli, F., Barbieri, F., Belcore, E., and Pinto, L.; Integration of UAV-LIDAR and UAV-photogrammetry for infrastructure monitoring and bridge assessment, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., 2022, XLIII-B2-2022, 995–1002, https://doi.org/10.5194/isprs-archives-XLIII-B2-2022-995-2022

MIT, (2020). Linee guida per la classificazione e gestione del rischio, la valutazione della sicurezza ed il monitoraggio dei ponti esistenti

Ioli, F., Pinto, A., and Pinto, L.; UAV photogrammetry for metric evaluation of concrete bridge cracks, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., 2022, XLIII-B2-2022, 1025–1032, https://doi.org/10.5194/isprs-archives-XLIII-B2-2022-1025-2022.

Schuetz, M., 2016. Potree: Rendering Large Point Clouds in Web Browsers. Master's thesis, Technische Universitat Wien