



CURRICULUM VITAE



Personal information

Surname / First name **NEX FRANCESCO CARLO**

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Nationality Italian

Date of birth 24, DECEMBER, 1981

Gender male

Research experience

Dates From **15/1/2010**

Occupation or position held Post Doc in Geomatics

Main activities and responsibilities *Digital photogrammetry and LiDAR data integration in aerial and terrestrial applications (ICAR/06 – Topography and Cartography)*
The work concerns the improvement of the algorithms realized in the PhD thesis and their extension to aerial applications. The idea is to automate the plotting of many of the cartographic elements needed in the map production.

Name and address of employer Polytechnic of Turin – DITAG - Environment and Geo-Engineering Department

Type of business or sector Research activity

Dates From **1/1/2007** to **31/12/2009**

Occupation or position held Ph.D. in Geomatics

Main activities and responsibilities *Digital photogrammetry and LiDAR data integration in terrestrial applications (ICAR/06 – Topography and Cartography)*
The work concerned the implementation of original and innovative software of integration between the LiDAR data processing and multi-image matching algorithms for the breakline extraction of building breaklines (architectural applications). The final goal was to ease and speed up the drawings production and the segmentation during the modeling of the façades, reducing to the minimum the manual intervention.

Name and address of employer Polytechnic of Turin – DITAG - Environment and Geo-Engineering Department

Type of business or sector Research activity

Dates	From 4/26/2006 to 31/12/2006
Occupation or position held	Scholarship holder
Main activities and responsibilities	<i>Aerial and Satellite Digital Photogrammetry (ICAR/06 – Topography and Cartography)</i> The work concerned the evaluation of the geometrical reliability of satellite and aerial images for great map production. Several sensors were considered and tested.
Name and address of employer	Polytechnic of Turin – DITAG - Environment and Geo-Engineering Department
Type of business or sector	Research activity
Dates	From 3/9/2005 to 21/12/2005
Occupation or position held	Stage – Scholarship holder
Main activities and responsibilities	<i>Data analysis</i> The work concerned the analysis and the processing of the data provided by the weather network of Valencia (Spain) for the XXXII America's Cup (2007). The achieved results allowed a model of the wind speed and direction changes to be realized. This work was the object of the master equivalent degree thesis.
Name and address of employer	ISITV – Université de Toulon et du Var, Toulon (France)
Type of business or sector	Research activity
Further professional experiences	
Dates	From 2008 to 2009
Main activities and responsibilities	Development of the algorithm of multi-image matching for the DSM extraction from images acquired by mini UAS. Tests on the algorithms of DSM extraction from images acquired by mini UAS. In particular both wing planes and mini-helicopter UAS were used in the image acquisition
Dates	From 2008
Main activities and responsibilities	Development of an innovative photogrammetric approach for the orientation of the images acquired by the Low Cost Mobile Mapping System of the Politecnico di Torino. In particular the integration between GNSS/INS system and the photogrammetric approach has been studied.
Dates	From 9/2008 to 10/2008
Main activities and responsibilities	Integrated Survey of the Roccaverano Church. Tests on algorithms of automated 3D lines extraction for technical drawing productions from LiDAR data and photogrammetric images. Modelling of the church and the surrounding urban area.
Dates	From 1/2008 to 4/2008
Main activities and responsibilities	Involvement in the topographic and LiDAR survey operation of Misericordia Church in Torino (Research agreement between Building Engineering and Territorial Systems Department (DISET - Politecnico di Torino) and Regional Board of the Ministry of Cultural Heritage and Environment Conservation).
Dates	From 2007 to 2008
Main activities and responsibilities	Glacier and floods monitoring in the Aosta Valley using airborne and terrestrial laser scanners (Research agreement between the Politecnico di Torino and Valle d'Aosta Region; coordinator Prof. Rinaudo).
Dates	12/2007
Main activities and responsibilities	3D survey and modelling of one of Aosta anthropomorphic stela. Realization of the 3D model of the Steele for virtual reality purposes.

Dates	From 3/2007 to 5/2007
Main activities and responsibilities	Aerial triangulation of multi-temporal images for the evaluation of the landslide in Vibo Valentia (Italy). (Research agreement between the Public Prosecutor's Office of Vibo Valentia and the Politecnico di Torino; coordinator: Prof. Dequal)
Education and training	
Dates	14/4/10
Title of qualification awarded	<i>PhD in Geomatics</i> Title of the Thesis: "Analisi statistico-climatologia di un Database meteorologico complesso nel Golfo di Valencia"
Name and type of organization providing education and training	Polytechnic of Turin
Dates	3/15/06
Title of qualification awarded	<i>Master equivalent degree in Environmental Engineering</i> – Polytechnic of Turin awarded with 110/110 cum laude – Polytechnic of Turin. Title of the Thesis: "Analisi statistico-climatologia di un Database meteorologico complesso nel Golfo di Valencia" (Statistical analysis of a weather information database in the Valencia Gulf).
Name and type of organization providing education and training	Polytechnic of Turin
Dates	12/17/03
Title of qualification awarded	<i>Degree in Environmental Engineering</i> – Polytechnic of Turin awarded with 110/110 cum laude – Polytechnic of Turin Title of the Thesis: "Reti di stazioni permanenti GPS per il posizionamento in tempo reale" (GPS networks for real time positioning)
Name and type of organization providing education and training	Polytechnic of Turin
Dates	7/2000
Title of qualification awarded	School Diploma – "N.Copernico" Scientific High School – Torino awarded with 100/100
Name and type of organization providing education and training	"N.Copernico" Scientific High School – Torino
Awards and honours	
From 2008	Honorary Fellow in Survey and Cartography at the Architecture Faculty of the Politecnico di Torino
5/2009	Invited speaker in the International <i>GEOCAD '09 Symposium</i>
Teaching	
From 2007	Lecturer in the survey and cartography courses at the Politecnico di Torino. In particular: Il Architecture Faculty – Politecnico di Torino <ul style="list-style-type: none"> ▪ 01ESCEH - <i>Strumenti cartografici e della rappresentazione</i> ▪ 04CWAB - <i>Topografia/Rilievo e metodologie del rilievo</i> (Prof. Fulvio Rinaudo)

I Engineering Faculty – Politecnico di Torino
 ■ 01CWYFB - *Topografia e cartografia*
 (Prof. Andrea Lingua)

4/2010 Teacher in the ECDL GIS course – COREP (Torino)

Personal skills and competences

Mother tongue(s) **Italian**

Other languages

English
 (P.E.T pass with merit)

French

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
good	Very good	good	good	Very good
good	good	Very good	Very good	good

Computer skills and competences

Matlab, C++ (basic), Leica Photogrammetry Suite, iWitness pro, Socet Set, Z-Map, Z-Map laser, Z-Scan, Riscan Pro, Rapidform, Geomagic, Envi, ArcGis, Statistical packages (R), Microsoft office packages, AutoCad, Photoshop, etc.

Programming skills: *Matlab, C++(basic)*

Digital Photogrammetry software : Leica Photogrammetry Suite, iWitness pro, Socet Set, Z-Map, Z-Map laser, Z-Scan

LiDAR data processing software: Riscan Pro, Cyclone, Sirlo

Graphical Software: *ENVI, Adobe Photoshop, Corel Draw*

Technical drawing Software: *Autocad*

Modeling Software: *Geomagic, Rapidform*

Topographical and GPS Software: *Starnet, LGO, GPSurvey*

Geographic information System Software: *ArcView, ArcMap, ArcInfo*

Other packages: *R statistical software, AutoCad, MicroStation*

Other skills and competences (sports activities)

Crew member on sailing race boats involved in national and international competitions in the GP42, IMS, ORC, IRC, Maxi, Farr40 circuits.
 Umpire in the Italian alpine skiing competitions.

Driving licence

Driving Licence (licence B)
 Boat License

Publications

PAPERS ON JOURNALS AND BOOKS

1. Nex, F., 2010. Multi-Image Matching and LiDAR data new integration approach. Ph.D. Thesis, Politecnico di Torino, Torino, April 2010.
2. De Agostino, M., Lingua, A., Marenchino, D., Nex, F., Piras, M., 2010. GIMPhI: a new integration approach for early impact assessment. In: Applied Geomatics, ISSN: 1866-9298, (under review)
3. Chiabrando, F., Nex, F., Piatti, D., Rinaudo, F., UAV systems for photogrammetric surveys in archaeological areas. In: Journal of Archaeological Science (under review)
4. Chiabrando, F., Rinaudo, F., Nex, F., Marenchino, D., Piatti, D., *UAV systems for photogrammetric recording in archaeological areas: problems, suggestions, and products*, SPIE Europe Remote Sensing, 31 August 3 September 2009, Berlin Germany (also in: Remote Sensing for Environmental Monitoring , GIS

Applications and Geodesy IX)

5. Nex, F., Rinaudo, F., *New integration approach of photogrammetric and LiDAR techniques for architectural surveys*, In: International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, pp. 12-17, 2009, XXXVIII-3/W8, ISSN: 1682-1750
6. Lingua, A.; Marenchino, D.; Nex, F., *A comparison between "old And new" feature extraction and matching techniques in photogrammetry*, In: RevCAD, Journal of Geodesy and Cadastre, N° 9, pp. 43-52, 2009
7. Dequal, S.; Bendea, J. H., De Agostino, M., Marenchino, D., Nex, F., Piras, M., *New frontiers of Geomatics: some applications at the Politecnico di Torino*, In: In: RevCAD, Journal of Geodesy and Cadastre, N° 9, pp. 11-21, 2009
8. Lingua A., Marenchino, D., Nex, F., *Automatic Digital Surface Model (DSM) generation procedure from images acquired by Unmanned Aerial Systems (UASS)*, In: In: RevCAD, Journal of Geodesy and Cadastre, N° 9, pp. 53-64, 2009
9. Lingua A.; Marenchino, D.; Nex, F. *Performance analysis of the SIFT operator for automatic feature extraction and matching in photogrammetric applications*, SENSORS, pp. 3745-3766, 2009, Vol. 9(5), ISSN: 1424-8220, DOI: 10.3390/s90503745
10. Lingua, A.; Nex, F., *The semantic information of images acquired by aerial digital sensors in cartographic and environmental applications*, In: International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, pp. 1323-1329, 2008, Vol. XXXVII, ISSN: 1682-1750
11. Nex F., Rinaudo F. *Multi-Image Matching: "an old and new" photogrammetric answer to LiDAR Techniques*, In: International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, pp. 621-626, 2008, Vol. XXXVII, ISSN: 1682-1750
12. Chiabrando, F., Nex, F., Piatti, D.; Rinaudo, F., *Il rilievo metrico della Chiesa della Misericordia di Torino a supporto del cantiere di restauro*, In: Bollettino della Società Italiana di Fotogrammetria E Topografia, 2008, Vol. 1, ISSN: 1721-971X
13. Giulio Tonolo, F., Perez, F., Nex, F., PIRAS, M., *3D map production using an Orbview-3 stereo pair*, In: Geoinformation in Europe, Millpress (NLD), 27th Earsel Symposium, Bolzano 4-7 June 2007, pp. 601-608, 2008, ISBN: 9789059660618

PROCEEDINGS

14. De Agostino, M., Lingua, A., Nex, F., Piras, M., 2010. A novel visual based navigation approach dedicated to low cost MMS. Proceedings of: IEEE/ION PLANS 2010, Indian Wells/Palm Springs, California May 4-6, 2010 (to be published)
15. Nex, F., Rinaudo, F., 2010. PHOTOGAMMETRIC AND LIDAR INTEGRATION FOR THE CULTURAL HERITAGE METRIC SURVEYS. IN: International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XXXVIII, 2010 (to be published).
16. Chiabrando, F., Nex, F., Piatti, D., Rinaudo, F., 2010. Integration of ToF cameras and multi-image matching approach for the cultural heritage survey. In: International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XXXVIII, 2010 (to be published).
17. Nex, F., Rinaudo, F., *Digital photogrammetry and LiDAR: new ideas for cultural heritage metric surveys*. In: CIPA Symposium 2009, 11-15 October 2009, Kyoto, Japan, (to be published).
18. De Agostino, M., Lingua, A., Marenchino, D., Nex, F., Piras, M., *A new photogrammetric combined approach to improve the GNSS/INS solution*. In: ION GNSS Proceedings, ION GNSS, Savannah – GE 22-25 September 2009, to be published
19. Nex, F.; Rinaudo, F. *Un nuovo approccio di integrazione fra le tecniche LiDAR e fotogrammetriche*, Congresso SIFET 2009, Mantova 24-26 Giugno 2009, 2009
20. Lingua, A., Marenchino, D., Nex, F.; *L'estrazione automatica di Modelli altimetrici per la produzione di cartografia speditiva mediante tecniche fotogrammetriche*, Congresso SIFET 2009, Mantova 24-26 Giugno 2009, 2009

21. Lingua, A.; Marenchino, D.; Nex, F., *A comparison between "old And new" feature extraction and matching techniques in photogrammetry*, In: Proceeding of the International Symposium GEOCAD '09, Ministerul Educatiei Cercetarii si Inovarii (ROM), International Symposium GEOCAD '09, Alba Iulia 7-9 May '09, pp. 188-197, 2009
22. Dequal, S.; Bendea, J. H., De Agostino, M., Marenchino, D., Nex, F., Piras, M., *New frontiers of Geomatics: some applications at the Politecnico di Torino*, In: Proceedings of the International Symposium GEOCAD '09, Ministerul Educatiei Cercetarii si Inovarii (ROM), International Symposium GEOCAD '09, Alba Iulia May 7-9 '09, pp. 93-103, 2009
23. Lingua A., Marenchino, D., Nex, F., *Automatic Digital Surface Model (DSM) generation procedure from images acquired by Unmanned Aerial Systems (UASS)*, In: Proceedings of the International Symposium GEOCAD '09, Ministerul Educatiei Cercetarii si Inovarii (ROM), International Symposium GEOCAD '09, Alba Iulia May 7-9, pp. 198-208, 2009
24. Nex F., Rinaudo, F., *Un nuovo approccio di integrazione fra le tecniche LiDAR e fotogrammetriche*, In: Convegno Nazionale SIFET, Società Italiana di Fotogrammetria e Topografia (ITA), SIFET 2009, Mantova 24-26 Giugno 2009, pp. 39-40, 2009, ISBN: 88-901939-7-2
25. Lingua, A., Marenchino, D., Nex, F., *L'estrazione automatica di modelli altimetrici per la produzione di cartografia speditiva mediante tecniche fotogrammetriche*, In: Convegno Nazionale SIFET, Società Italiana di Fotogrammetria e Topografia (ITA), Convegno SIFET 2009, Mantova 24-26 Giugno 2009, pp. 37-38, 2009, ISBN: 88-901939-7-2
26. Chiabrando, F., Nex, F., Piatti, D., Rinaudo F., *Integrated digital technologies to support restoration sites: a new approach towards a standard procedure*, In: Digital Heritage Proceedings of the 14th International Conference on Virtual Systems and Multimedia, Archaeolingua (HUN), International Conference on Virtual Systems and Multimedia, Limassol, Cyprus 20-25 October 2008, pp. 60-67, 2008, ISBN: 978-963-9911-00-0
27. Bornaz, L., Marenchino, D., Nex, F., Rinaudo F., *Riegl LPM-321 uno strumento Laser Scanner a lunga portata per i rilievi ambientali*, In: Atti Conferenza ASITA, ASITA - GEO Eventi & Servizi (ITA), Conferenza Nazionale ASITA, L'Aquila 21-24 Ottobre 2008, 2008, Vol. 1
28. Lingua, A., Marenchino, D., Nex F., *L'operatore SIFT per l'orientamento di immagini acquisite con prese non-normali*, In: Atti Conferenza ASITA, ASITA - GEO Eventi & Servizi (ITA), Conferenza Nazionale ASITA, L'Aquila 21-24 Ottobre 2008, 2008, Vol. 1
29. Bornaz, L., Dago F., Lingua, A., Nattero, M., Nex F., *Tecniche lidar per il controllo di simmetria della carena di una nave*, In: Atti Conferenza ASITA, ASITA - GEO Eventi & Servizi (ITA), Conferenza Nazionale ASITA, L'Aquila 21-24 Ottobre 2008, 2008, Vol. 1
30. Menci, L., Nex, F., Rinaudo, F., *ZSCAN Menci software: un nuovo strumento per le elaborazioni fotogrammetriche multimmagie*. In: Atti Congresso ASITA, Congresso Nazionale ASITA, Torino 6 - 9 novembre 2007, 2007, Vol. 1
31. Nex, F.; Giulio Tonolo, F., Rinaudo, F., Lingua, A., *Controllo di qualità a scala regionale di DTM acquisiti mediante tecniche SAR (SRTM)*, Congresso SIFET 2007, Arezzo 27-29 Giugno 2007, 2007
32. Nex, F., Rinaudo, F., Lingua, F., *Il contenuto informativo di immagini acquisite mediante sensori digitali per applicazioni cartografiche e ambientali*, Congresso SIFET 2007, Arezzo 27-29 GIUGNO 2007, 2007

**Congress and
Symposium**

2007 – 27th EARSeL International Symposium, Bolzano, Italy
2007 – Congresso SIFET, Arezzo, Italy
2007 – CIPA Symposium, Athens, Greece
2007 – Conferenza ASITA, Torino, Italy
2008 – Congresso SIFET, Sorrento, Italy
2008 – ISPRS Symposium, Beijing, China
2008 – Conferenza ASITA, L'Aquila, Italy
2009 – GeoCAD '09 Symposium, Alba Iulia, Romania (INVITED SPEAKER)
2009 – Congresso SIFET, Mantova, Italy
2009 – Laserscanning '09, Paris, France
2009 – CIPA '09, Kyoto, Japan
2010 – Gi4DM 2010, Torino, Italy

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.



Date: **22 / 4 / 2010**

Full name of authorized representative: Francesco Carlo NEX