CHIARA SCAINI - Curriculum vitae

Place and date of Birth: Udine, 25 April 1983
Address (office): C. Jordi Girona 31, Building NEXUS II, 08034 Barcelona
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Education:

• 2010 – 2015: **Doctor of Science in Environmental Engineering at the Polytechnic University of Cataluña (UPC) in collaboration with the Barcelona Supercomputing Center (BSC),** Computer Application in Science and Engineering (CASE) department. Thesis Supervisor, Dr. Arnau Folch (BSC).

• 2007 – 2009: **Master of Science in Civil and environmental engineering, Udine University,** Italy, with 103/110 mark. Master thesis entitled: "A GIS methodology to risk evaluation caused by a volcanic event in Tenerife, Spain".

• 2003 – 2007: **Bachelor of Science in Civil and environmental engineering, Udine University**, with 90/110 mark. Thesis entitled: "Geothermal technologies for buildings heating and air conditioning".

Fellowships:

• May-June 2013: Mobility Fellowship, Ministerio de Ciencia y Innovación, Spain. Internship at Trieste University, department of Engineering and Architecture. Collaboration with Lorenzo Castelli and Tatjana Bolic.

• February-March 2012: Mobility Fellowship, Ministerio de Ciencia y Innovaciòn, Spain. **Internship at Geneva University** (UNIGE), department of Earth Sciences. Collaboration with Costanza Bonadonna, Adriana Galderisi and Sebastien Biass.

• May 2011: **Mobility Fellowship, CYTED-Ceniza research project,** 10 days internship in the San Francisco De Quito University, Ecuador. Collaboration with René Parra, PhD in Environmental Engineering at the UPC of Barcelona.

• January-September 2005: **Erasmus scholarship**, Universitat Autónoma de Barcelona (UAB), 5 subjects followed at the Geology and the Chemical Engineering Faculties.

Professional experience:

• January 2015 – today: **External consultant, Vanguardistas** (http://www.vanguardistas.net/), data management and web Content Management System.

• November 2010 – December 2014: **Researcher at Barcelona Supecomputing Center,** Computer Application for Science and Engineering (CASE) department. Environmental simulation group. This collaboration is still ongoing.

• January 2010 – November 2010: **American Express international center, Madrid**. Department of risk and credit analysis. Authorizations for Italian market. Fraud risk analysis for Spanish market.

• May-August 2009: **Internship in Volcanology Department of National Museum of Natural Sciences (CSIC), Madrid**. International research program "Italy-Spain integrated action".

• January-March 2009: **Internship in ASEMA Studio Associato, Udine (Italy)**. Development of a structural project in a high-seismicity area, comparing Italian and European building codes. Finite elements softwares: SAP2000 and Travilog Titanium.

• June-September 2008: **Internship in the Earth Cience Institute Jaume Almera (CSIC), Barcelona**: agreement between Udine University and CSIC Volcanology department CSIC (references: Roberto Carniel, Joan Marti Molist, Alicia Felpeto).

• 2004-2009: Temporary Jobs as hostess, providing tourist information and translation services for conferences and events.

• June-September 1999 and 2000: First job as assistant in administration and communication office, at Tecnoservice SNC., Rivignano (Udine).

Training:

• November 2014: Courses attended at **ICTP (International Center for Theoretical Physics), Trieste.** "Developer School for **HPC applications in Earth Sciences** and "Symposium on HPC and Data-Intensive Applications in Earth Sciences". Organized by ICTP, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Partnership for Advanced Computer in Europe (PRACE), and CINECA (http://www.cineca.it/it).

• June 2014: **International HPC summer school**: HPC challenges in computational sciences, organized by PRACE and XSEDE, 1-6 June 2014, Budapest (Hungary).

• December 2013: Participation to the **course for writing European Projects for the Horizon2020 European program**, organized by Barcelona Supercomputing Center. Participation to the **Infodays organized by CDTI** (Centro Para el Desarrollo tecnologico y Industrial) about the FET program and the Transportation program of **Horizon2020.**

• March 2013: Short course "Introduction to parallel computing" organized by Nemoh Marie Curie Training Network at the Barcelona Supercomputing Center.

• March 2012: course "Fluid Dynamics" held by Jeremy Phillips (University of Bristol). Seminar "Volcanic activity in Iceland" held by Kate T. Smith (University of Edimburgh). Seminar "Short-term risk mitigation strategy associated with volcanic eruption of Puyehue–Cordón Caulle" held by Mauro Rosi (University of Pisa). Events organized by the Earth Sciences Department of UNIGE.

• Mayo 2011: Participation to the module "Volcanic Risk" of the **Master training CERG 2011**, organized by UNIGE Earth Sciences department. Participation to the field trip in Vulcano island, Eolie, Italy.

• October 2010: Ist **IUGG-WMO Workshop** "Ash dispersal forecast and civil aviation", organized by: University of Geneva, BSC, WMO (Aeronautical Meteorology Division) and British Geological Survey, Geneva.

• November 2010: "Primer taller de la red iberoamericana para el monitoreo y modelización de cenizas y aerosoles volcanicos y uso de Titan 2D", INETER (Instituto Nicaraguense de Estudios Territoriales), Managua, Nicaragua.

• November 2008-March 2009: Post graduate course "**Environment Evaluation and sustainable territorial Planning**", organized by the Italian Organization for Professional Formation (ENAIP) and financed by ESF (European Social Fund).

- <u>March 2009</u>: Seminary "Introduction and application of the **mental maps**", organized by ENAIP, Udine.
- <u>June 2008:</u> Course "**Risk Evaluation in agriculture**", organized by Public University of Navarra, Pamplona.
- <u>March-April 2008:</u> Post-graduate course "Team working and communication in business", ENAIP, ESF.
- <u>September-December 2008:</u> **Autocad 2D** course, ENAIP, ESF.
- <u>January 2007:</u> Course "**Marketing and tourism promotion**", organized byTurismo Fvg.
- <u>September-December 2006:</u> Course "**Introduction to sustainable development and international cooperation**", given by UOC (University Online Cataluña) with Engineers without borders Cataluña.

Conferences:

- <u>November 2014:</u> **GEORISK**: Improving geophysical risk assessment, forecasting, and management, organized by the **IUGG Commission on Geophysical Risk and Sustainability**. C. Scaini, A. Felpeto, J. Marti, R. Carniel, "A GIS-based methodology for the estimation of potential volcanic damage and its application to Tenerife Island, Spain", poster presentation.

- <u>April 2014:</u> **European Geosciences Union (EGU)** General Assembly, Vienna. S. Biass, C. Scaini et al. "Risk assessment for tephra dispersal and sedimentation: the example of four Icelandic volcanoes", presentation.

- <u>January 2014:</u> The **Tenth International Conference on Technology, Knowledge and Society**, Universidad Complutense de Madrid. C. Scaini, A. Folch, T. Bolic, L. Castelli, "Air traffic management during explosive volcanic eruption: towards a multidisciplinary approach", poster presentation. Participation awarded with the Graduated Scholar Award 2014.

- <u>November 2013:</u> Third **Sesar Innovation Days,** Stockholm, 2013. C. Scaini, T. Bolić, L. Castelli, A. Folch. "A GIS-based tool for the estimation of impacts of volcanic ash dispersal on European air traffic", presentation.

- <u>November 2013:</u> **II IUGG-WMO Workshop** "Ash dispersal forecast and civil aviation", Geneva, Switzerland.

- <u>July 2013:</u> **IAVCEI Scientific Assembly,** Kagoshima, Japan. C.Scaini, S. Biass, A. Galerisi, C. Bonadonna, K. Smith, A. Folch, A. Hoskuldsson, "Multi-scale impact assessment of tephra fallout and dispersal for 4 Icelandic volcanoes. Part II: vulnerability and impact assessment ", oral presentation. C. Scaini, L. Castelli, T. Bolic, A. Folch, "Impact assessment of volcanic ash dispersal on European civil aviation: case-study of 2010 Eyjafjallajökull eruption", poster.

- <u>May 2013:</u> **American Geophysical Union (AGU)** de las Americas meeting, Cancun. C. Scaini, R. Bonasia, L. Capra, M. Nathenson, L. Araña Salinas, C. Siebe, A. Folch, "Probabilistic hazard assessment of tephra dispersal from the Ochre Pumice Plinian eruption at Popocatepetl, Mexico and implications for civil aviation", oral presentation.

- <u>April 2013:</u> **GISRUK (GIS Research UK) conference**, University of Liverpool. "The role of GIS in the estimation of vocanic risk: case-study of Concepción volcano, Nicaragua", GISRUK Conference, Liverpool. Awarded as best Early Career Researcher paper.

- <u>November 2012:</u> **Cities on Volcanoes 7,** Colima, Mexico. C. Scaini, S. Biass, A. Galderisi, C. Bonadonna, K. Smith, A. Folch, A. Hoskuldsson, "Multi-scale impact assessment of explosive volcanic activity in Iceland: long-term analysis of the local impact and consequences on European air traffic, Poster." C. Scaini, A. Folch, "Probabilistic tephra hazard assessment and qualitative analysis of impacts from Concepción volcano, Nicaragua", Poster.

- <u>June 2012:</u> Summer School "Volcanic ash: from magma to aviation impact", organized by **Memovolc ESF (European Science Foundation) project**, Catania, Italy. "Generation of probabilistic Hazard maps for volcanic ash dispersal and application to Concepción Volcano (Nicaragua) and Hekla volcano (Iceland)", C. Scaini, A. Folch, Poster.

- April 2012: III Meeting of the **Iberoamerican Network CYTED-Ceniza** "Las Cenizas Volcánicas y la Aeronavegación: Un nuevo desafío", Universidad Nacional de Salta, Salta, Argentina. "Evaluación de la peligrosidad por caída y dispersion de cenizas. Metodologias y applicación al volcán Concepción, Nicaragua", presentation.

- <u>February 2012 :</u> "XIII Meeting of the Italian users and developers of Grass", Trieste, Italy.

- <u>January 2012</u>: First scientific meeting of the MeMoVolc research network project (Measuring and Modelling Volcano Eruption Dynamics) held in Clermont Ferrand, France.

- <u>June 2011</u>: Meeting of the **Iberoamerican Network CYTED-Ceniza**, Pasto, Colombia. "Mapas de peligrosidad por caida de cenizas del volcán Concepción, Nicaragua", oral presentation.

Publications:

- C. Scaini, T. Bolic, A. Folch, L. Castelli, "Civil aviation management during explosive volcanic eruptions: a survey on the stakeholders' perspective on the use of tephra dispersal models", **Journal of Volcanology and Geothermal Research**, accepted.

- C. Scaini, A. Folch, T. Bolić, L. Castelli, "A GIS-based tool to support air traffic management during explosive volcanic eruptions", **Transportation Research part C: Emerging Technologies**, accepted, in press.

- R. Bonasia, C. Scaini, "A review of tephra transport and dispersal modelling strategies and applications to far-range hazard assessment at some of the most active volcanoes in the world", **book chapter in: Volcanic ash: Chemical Composition, Environmental Impact and Health Risk**, Nova Publishing, accepted.

- Viehe, K., Carapuco, M., Scaini, C. "Global coastal management conference issues in global coastal management: linking researchers and practioners", **7th International Global Studies Conference,** proceedings, Common Ground Publishers, Shanghai University, China, 19-21 June 2014.

- C. Scaini, S. Biass et al., "A multi-scale risk assessment for tephra fallout and airborne concentration from multiple Icelandic volcanoes - Part II: vulnerability and impact", **Nat. Hazards Earth Syst. Sci.**, 14, 2289{2312, 2014, www.nat-hazardsearth-syst-sci.net/14/2289/2014/doi:10.5194/nhess-14-2289-2014.

- S. Biass, C. Scaini et al., "A multi-scale risk assessment for tephra fallout and airborne concentration from multiple Icelandic volcanoes - Part I: hazard assessment", **Nat. Hazards Earth Syst. Sci.**, 14, 2265{2287, 2014 www.nat-hazards-earth-syst-sci.net/14/2265/2014/doi:10.5194/nhess-14-2265-2014.

- C. Scaini.A. Felpeto, J. Marti, R. Carniel. "A GIS-based methodology for the estimation of potential volcanic damage and its application to Tenerife island, Spain", **Journal of Volcanology and Geothermal Research 278–279 (2014) 40–58**

- R. Bonasia, C. Scaini, L. Capra, M. Nathenson, L. Araña Salinas, C. Siebe, A. Folch. "Long-range hazard assessment of volcanic ash dispersal for a Plinian eruptive scenario at Popocatépetl volcano (Mexico): implications for civil aviation safety",

Bulletin of Volcanology, 76, 789, 2013.

• C. Scaini, T. Bolić, L. Castelli, A. Folch. "A GIS-based tool for the estimation of impacts of volcanic ash dispersal on European air traffic", Schaefer, Dirk (Editor), **Proceedings of the 3rd SESAR Innovation Days (2013) EUROCONTROL.** ISBN ISBN 978-2-87497-074-0.

• C. Scaini, A. Folch. "The role of GIS in the estimation of vocanic risk: case-study of Concepción volcano, Nicaragua". **Paper proceedings of 21st annual conference GIS Research UK (GISRUK) 2013**, awarded as "Best Early Career Research Paper".

• C. Scaini, A. Folch, M. Navarro. "Tephra hazard assessment at Concepción Volcano, Nicaragua", **Journal of Volcanology and Geothermal Research**, vol. 219-220, pp. 41-51, 2012.

• Sulpizio, R., Folch, A., Costa, A., Scaini, C., Dellino, P. "Hazard assessment of far-range volcanic ash dispersal from a violent Strombolian eruption at Somma-Vesuvius volcano, Naples, Italy: implications on civil aviation." **Bulletin of Volcanology**, DOI 10.1007/s00445-012-0656-3, 2012.

Seminars and teaching:

• <u>May 2013:</u> "Impacts of ash dispersal on civil aviation", given during the internship at **Trieste University**

• <u>May 2013</u>: "Volcanic risk management: a multidisciplinary approach", within the Applied Geophysics course, **Udine University.**

• <u>March 2009:</u> "Seismic and volcanic risk in Icod de los Vinos, Tenerife" within the Applied Geophysics course, **Udine University.**

Media and Communication

• Interview to **"La Vanguardia" newspaper**, published on 9th November 2014 in a special issue on the Barcelona Supercomputing Center.

• Video produced for the project **#VidasdeCiencia**, founded by FECYT (Fundación Española para la Ciencia y la Tecnología) and directed by Guillermo Martí Bastarrica and Teguayco Pinto Cejas: https://www.youtube.com/watch?v=03c6Iv5yE7E

• Participation to the European Commission 'DG Research and Innovation campaign "Women in Research and Innovation" ("**Science, it's a girl thing!**"), https://facebook.com/sciencegirlthing

• Video presented to the competition: "**Your PhD thesis in 3 minutes**": https://www.youtube.com/watch?v=V6Ev7q8KDsE

• Administrator of the **Facebook page of FALL3D software**: https://facebook.com/pages/Fall3D/134349153336681

Computer skills:

• OS: Windows, Mac OSX, Linux;

• programming: Shell scripting, Fortran90, Python, SQL, SQLAlchemy

• Handling and post-processing of binary files (Grib, Netcdf, Hdf5).

• Use of R, NCO, Grads, GIS (Grass, QGis, GvSig, ArcGIS), geospatial database (Sqlite, Spatialite)

• Environmental simulation programs: Titan2D, Fall3D, Ansys

• Advanced knowledge of: Microsoft Office and Open Office, Autocad 2D.

• Basic (user) knowledge: Matlab, Octave, Geostudio, Shake2D, Cobol, Ansys, Modflow, Hidrochem, Illwis, Genie2.0, Miramon, Dreamweaver, Adobe Photoshop and Lightroom, WRF meteorological model, SAP2000 and TravilogTitanium.

Languages:

• <u>Italian and Friulian:</u> Native speaker.

• <u>Spanish:</u> High level, written and spoken.

• <u>English:</u> High level, written and spoken. Level B2 (Malta University, 2005; ENAIP, 2007)

• <u>Catalan:</u> Basic level (UAB, 2005), elementary level(E1), Ayuntamento de Barcelona (2008).

• <u>French</u>: Elementary level.

Personal data:

• I am an outgoing and enthusiastic person. I like traveling and I have good adaptation capacities. I am very active, I like all kind of sports, in particular volley. I have been playing piano for 12 years.

• During my personal and professional experience, I developed my verbal and non-verbal communication and I learned the importance of listening and being proactive, crucial for a good team-working.

• One of my most important skills is the organization and synthesis ability, that helps me setting priorities and effectively managing my time.

• have the driving license B.