

Curriculum vitae

EMANUELA ELISA CEPOLINA

Born in Genova, Italy, 17/3/79

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Current position: President and Responsible for Mine Action at Snail Aid – Technology for development (volunteer).
Consultant (VAT number as engineer).
External consultant to the project “Development of Human Machine Interface of an Artificial Hand” undergoing at the University of Prishtina, Kosovo.

Education:

May2008 PhD in Mechanical Engineering at the University of Genova, Italy. Argument of the thesis was the participatory design and development of a low-cost machine for humanitarian demining operations, derived from an agricultural machine. The machine was the first to be designed to go back to its original agricultural use after demining. While working at the thesis, I spent long time in the field, both in Sri Lanka and in Jordan, with the kind support of Norwegian People’s Aid.

Feb2003 Mechanical Engineering degree (5 years) at the University of Genova; final grade 108/110.
The argument of the thesis was the design of a robot for landmine location in relatively inaccessible areas covered by thick vegetation.
While working for the thesis, I spent a period of two months (17/10/2002-17/12/2002) researching at the University of Western Australia, Perth, WA, under the supervision of Prof. James Trevelyan. I have received a grant specially conceived for researchers abroad (D.R. 78 del 14.2.2001) offered by the University of Genova.

Sep2001 Mechanical Engineering degree at D.I.T. (Dublin Institute of Technology), Dublin, Ireland.
The thesis argument was the control via PLC of a vertical wall walking robot.

Sep2000-July2001 Erasmus student at D.I.T. (Dublin Institute of Technology), Dublin, Ireland. I have received a Socrates/Erasmus grant for 10 months.

1992-1997 Classical studies at C. Colombo High School, Genova, Italy (final grade 58/60).

Relevant courses attended:

- Mine Risk Education in Humanitarian Mine Action Programming – Training for MRE experts and MRE Project Managers, Bolsena (VT), Italy, 16-21 February 2007.
- Training of trainers and facilitators – Facilitating participatory decision making workshops, Oradea, Romania, 19-27 July 2006.
- Social methodology research, University of Genova, 2005.
- Advanced course in robotics, Geometric Methods for Analysis and Control of Biomimetic Robotic Locomotion, by Joel W. Burdick professor at the California Institute of Technology, University of Verona, 26-29 Agosto 2002.
- Motion Control and Coordination of Mechanical and Robotic Systems, by Ilya V. Miroshnick, professor at the Saint- Petersburg State Institute of Fine Mechanics and Optics- Technical University, 8 April 2002.

Working experiences:

Aug 2016 – June2017 Assistant professor at the Department of Mechanical Engineering Technology at American College of the Middle East, Kuwait. I taught Statics, Strength of Materials

and Physics to Kuwaiti students in their twenties.

- Jan 2013 – Febr2016 Consultant for Snail Aid - Technology for Development. My duties regarded the management of all Snail Aid contributions to the EU co-funded project called Toolbox Implementation for Removal of Anti-personnel Mines, Sub-munitions and UXOs (TIRAMISU). The management included: coordination of activities, budget management, research on new systems for Mine Risk Education, design and implementation of in field mission in mine affected country both to test and evaluate tools and to collect end-user needs, analysis of end-users requirements, design and implementation of explosive tests, draft of new standards, dissemination of results among the mine action community both through presentations and paper writing and Snail Aid website, report writing, ...
- Oct 2014 In the framework of TIRAMISU project: pilot MRE campaign of Billy Goat Radio tool in Cambodia; organization, implementation and analysis of results in collaboration with local authorities
- Sept 2013 – Oct 2013 In the framework of TIRAMISU project: Pilot MRE campaign of Billy Goat Radio tool in the Saharawi refugee camps in South-West of Algeria; organization, implementation and analysis of results in collaboration with local authorities
- Apr 2012 – July 2012 In the framework of TIRAMISU project: Land Release in Action, in-field study on land release practices in six mine affected countries. The study brought me to Angola, Croatia, Bosnia Herzegovina, Iraqi Kurdistan, Tajikistan and Cambodia to analyse in details the process of land release in use in the country with particular attention to the use of machines in technical survey and to analyse end-user requirements.
- Jan 2010 – Dec2011 Research assistant at the PMARLab, Department of mechanics and machines design (DIMEC) of the University of Genova, Italy.
Working full time on the project LOCOSTRA (Low - Cost Tractors for humanitarian demining) co-funded by the Italian Ministry for Economic Development and the Italian Institute for Foreign Trade. The project was born as a continuation of my OhD research work. After writing the proposal, I have been working at coordinating the whole project, involving more than ten partners. At the same time I have been also involved in the design and development of the machine, particularly of the remote control unit of the tractor. The project ended with the test and evaluation of LOCOSTRA machine in Jordan; the test and evaluation of LOCOSTRA machine was coordinated, organized and practically carried out by me in collaboration with NPA Jordan, NCDR and GICHD. Between July and August 2011 I have worked at the Asian Institute of Technology, in Bangkok, in the framework of an exchange program. During this time, I had the chance to visit APOPO/TMAC mine action operations in Tat province of Thailand.
- Sept2008-April2012 Part time teacher of mechanical subjects in two different technical high schools in Genova. Subjects include technical drawing, general physics, mechanics and dimensioning of mechanical elements. Both schools collect students with severe difficulties and with educational problems.
- Jan 2005–May2008 PhD student at the University of Genova. The PhD subject was the participatory design and development of a cheap, remote controlled mechanical system for humanitarian demining operations. The machine used a commercial power tiller as tractor unit, as these are small and cheap agricultural machines widely spread in developing countries affected by the landmine problem. The PhD work primarily encompassed the mechanical engineering design of the machine but also the implementation of a new participatory design methodology that assures the involvement of end-users into the whole design process. I spent approximately one month in Sri Lanka (17/1/2005 – 9/2/2005) working as a volunteer for NPA and establishing collaborations for the PhD. In August 2006 I spent one month and half in the Eastern Europe, first in Romania attending a course on participatory tools for group decision making and later visiting mine affected countries such as Turkey and Georgia, to deepen my knowledge into the relationship between landmines and development. Between December and March 2008, I spent two months in Jordan, working at the development and test of the ground processing tool module of the mechanical system in collaboration with NPA Jordan and the University of Jordan. The PhD work led to the development of the first open-source demining machine designed to be reconverted to agricultural use and thus serve economic development of mine affected countries.

- Apr2003-Dec2004 Research assistant at the PMARLab, Department of mechanics and machines design (DIMEC) of the University of Genova, Italy.
The main topics of research have been: technologies for humanitarian demining, in the framework of the collaboration between DIMEC and EUDEM2, The EU in Humanitarian Demining- State of the Art on HD Technologies, Products, Services and Practices in Europe and robotics in quarry industry, in the framework of the European Project SmartWire and Osnet.
- Apr 2004- Sep2004 In-field research in mine-affected countries: Mozambique, Namibia (for Angola), Sri-Lanka and Cambodia, implementing the study "Providing demining technology end-users need" designed by the author in collaboration with EUDEM2, The EU in Humanitarian Demining- State of the Art on HD Technologies, Products, Services and Practices in Europe.
I collected data also for the Geneva International Centre for Humanitarian Demining (GICHD), for "A Study of Manual Mine Clearance".
- June 2004 I spent 2 weeks working at the Geneva International Centre for Humanitarian Demining (GICHD) organizing the data collected during the in field survey.

Selected papers on international books, journals and conferences:

- E.E. Cepolina, "Proposal for a New Framework for the Acceptance Test and Comparative Evaluation of Demining Machines not designed to detonate hazards", 14th IARP WS HUDEM'2016, 26 Apr 2016, Biograd Croatia.
- E.E. Cepolina et Al., "Latest developments on tools for Mine Risk Education within TIRAMISU project", 14th IARP WS HUDEM'2016, 26 Apr 2016, Biograd Croatia.
- L. Scapolla and E.E. Cepolina "Pilot MRE campaign in Cambodia using Billy Goat Radio System", 13th IARP WS HUDEM'2015, 28-30 Apr 2015, Biograd, Croatia
- E.E. Cepolina et Al., "Design Issues and in field tests of the new sustainable tractor LOCOSTRA", Robotics 2014, Volume 3, Issue 1, March 2014, MDPI Publications (<http://www.mdpi.com/2218-6581/3/1/83>)
- E.E. Cepolina et Al., "Open source hardware for mine action", 12th IARP Workshop HUDEM'2014, 23 April 2014.
- L. Scapolla and E. E. Cepolina, "Mine Risk Education: Billy Goat Radio: the methodology", 12th IARP Workshop HUDEM'2014, 23 April 2014
- E. E. Cepolina et Al., " Toward the accreditation of LOCOSTRAv2: results of pre-tets", Mine Action 2014, Zagreb, 23-25 April 2014
- E. E. Cepolina, " A New Tool for Evaluating Demining Machines Cost-Efficiency", UNMAS/GICHD Technology Workshop, Pretoria, 18-20 June 2014
- L. Scapolla and E. E. Cepolina, "Billy Goat Radio: MRE in Sahrawi Refugee Camps" The Journal of ERW and Mine Action, Issue 18.3, Fall 2014
- E. E. Cepolina, "Introduction to a comprehensive mine action approach", invited speaker at GFFO annual meeting " Informative discussion and exchange of views on issues of humanitarian mine and ordnance clearance", Berlin, 28 November 2013
- E.E. Cepolina with editorial support of A. V. Smith, "Land Release in Action", The Journal of ERW and Mine Action, Issue 17.2, 44-50, 2013.
- L. Scapolla, E. E. Cepolina, " A State of the Art of MRE programs from an educational entertainment point of view", 10th International Symposium on Humanitarian Demining, Sibenik, 23-24 April 2013
- Przybylko M., Cepolina E.E, Zoppi M., Polentes G.B., "A Robust, Simple, Low-Cost Autonomy Enhancement Module for LOCOSTRA: A remotely controlled demining machine", 9th International Symposium HUDEM 2012, Sibenik Croatia
- E.E. Cepolina, M. Zoppi, M. Przybylko, "LOCOSTRA: a low cost semiautonomous tractor for reclaiming mine-affected areas to agriculture", ICRA 2012, USA from May 14-18, 2012
- E.E. Cepolina, M.Zoppi and V.Belotti "LOCOSTRA: Blast Resistant Wheels Test", The Journal of ERW and Mine Action, Issue 15.3, Fall 2011.
- E.E. Cepolina, M. Zoppi, G. Polentes, B. Snobar, F. Abel, B. Kasesbeh "In-field tests of LOCOSTRA in Jordan" Proceedings of the International Symposium on Humanitarian Demining 2011, April 26-28 2011, Sibenik, Croatia.
- E.E. Cepolina "Appropriate Technologies in Humanitarian Demining: Potential Impact of participatory Re-designed Agricultural Machines and Tools", Proceedings of the International Symposium on Humanitarian Demining 2010, April 27-29 2010, Sibenik, Croatia.
- E.E. Cepolina, Zoppi M. "Sustainable and Appropriate Technologies for Land Release in Humanitarian Demining", Chapter of the book "Using Robots in Hazardous Environments: Landmine detection, demining and other applications", published in Dec 2010 by Woodhead Publishing Limited.

- E.E. Cepolina, Zoppi M. "Could Agricultural Machines Make a Country 'Impact Free' by 2010?", The Journal of ERW and Mine Action, Issue 13.2, annual edition, August 2009.
- E.E. Cepolina, B. Snobar "Agricultural Derived Tools for Ground Processing in Humanitarian Demining Operations – set up of Testing Facility in Jordan", Proceedings of the 7thth International Advanced Robotic Programme (IARP) Workshop HUDEM08, March 28-30 2008, Cairo, Egypt.
- E.E. Cepolina, P. Silingardi "Power Tillers for Demining in Sri Lanka: Vegetation Cutting Module", Proceedings of the 13th International Conference on Advanced Robotics, August 21-24 2007, Jeju, Korea.
- E.E. Cepolina, "Power Tillers for Demining in Sri Lanka: Participatory Design of Low-cost Technology", Chapter of the Book "Humanitarian Demining, Innovative Solutions and the Challenges of Technology", published in February 2008 by Advanced Robotic Systems, Vienna, Austria, EU. Downloaded more than 5000 times.
- E.E. Cepolina, M.U.Hemapala, "Power tillers for demining: blast test", International Journal of Advanced Robotic Systems, Volume 4 Number 2, June 2007.
- E.E. Cepolina, "A pranzo nella roccaforte Kurda", www.mentelocale.it, October 2006.
- E.E. Cepolina, "Power Tillers and Snails for Demining in Sri Lanka", Journal of Mine Action, Issue 10.1, August 2006.
- E.E.Cepolina, "Machine armouring preliminary test", Report of Machine Armoring Preliminary Test, PAT for demining website, <http://www.dimec.unige.it/PMAR/demining/index.html>, May 2006.
- M.Salvi, E.E.Cepolina, "Effects of the Explosion of a Landmine on a Power Tiller", Report of Preliminary Test, PAT for demining website, <http://www.dimec.unige.it/PMAR/demining/index.html>, November 2005.
- E.E. Cepolina, C. Bruschini, K. De Bruyn, "Providing demining technology end-users need", pg. 9-14, Proc. of the IARP International workshop on Robotics and Mechanical Assistance in Humanitarian Demining (HUDEM2005), 21-23 June 2005, Tokyo, Japan.
- E. E. Cepolina, C. Bruschini, "Catalogue of Demining Technologies in Field Use", EUDEM2 publication, EUDEM website <http://www.eudem.info/>
- E. E. Cepolina, C. Bruschini, K De Bruyn, "Field Survey Results", EUDEM2 publication, EUDEM website <http://www.eudem.info/>

Mine-affected countries visited during the research on new systems for mine action:

Kosovo, Croatia, Turkish Kurdistan, Georgia (Abkazia), Cambodia, Laos, Thailand, Sri Lanka, Mozambique, Namibia, Mauritania, Jordan, Angola, Bosnia Herzegovina, Iraqi Kurdistan, Tajikistan, Senegal, Algeria.

Foreign languages:

English fluent; **French** good; **Spanish:** basic

Computer skills:

Microsoft Office, Twine, Canvas, Ink Scape, Sketch up, ProEngineer/CREO, ADAMS, Canvas, Maple7, Macromedia Dreamweaver, FPSoft.

Other activities:

I'm currently president and legal representative of the no profit social enterprise "Snail Aid-Technology for Development". Snail Aid helps producing low cost technologies for sustainable development, designing them together with end-users in a participatory way. My duties as president are on a volunteer basis.

I have spent four years at building my house, with my own hands and with the help of friends and professional artisans. The house is a natural-passive building with a structure made of wood and straw bales. My house will soon host the headquarters of Snail Aid – Technology for Development and will host a permanent open air research centre, since there are 13.000m² of agricultural land to be used for experimenting conservative agriculture and sustainable technologies.

I have been scout for 17 years. I have been scout leader for 3 years in the scout group GE13. I have been educator of Cops, children between 8 and 12 years old and for Rovers, 16 years old guys.

I like travelling and meeting new cultures. I like almost every kind of sport, particularly: backcountry and alpine skiing, trekking, climbing and diving.