

Curriculum Vitae

PERSONAL DETAIL

Name	Francesco Cepolina	Date of Birth	8-Oct-1974
Marry Status	Married	Sex	Male
Nationality	Italian	Health	Excellent

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PROFILE

I have a very good background on design, robotics and mechatronics grown during my working activity in California. I have spent the last four years in an international company. I have taken part to the design, production and management of different industrial products. I can fulfil complex assignments in full autonomy. I own several patents. I am highly interested in the management and optimisation of the production processes. I am used to establish clear communication and relationships with partners, giving clear assignments and pointing out each one capability: the team activity is the key to reach the final goal.

EDUCATION

1,2002 ~ 11,2005

School of Mechanical Engineering, University of Genoa, Italy

PhD thesis in Mechanics and Machines Design

This PhD is in co-tutorship with the University of Paris 6

Main courses: Advanced Course in Telerobotics, Automatic Learning, Microsystem Mechanical Design, Water Management, Intuitive Surgical Training

Final project title: Development of micro tools for surgical applications

<http://www.cepolina.com/download/finger-t.pdf>

1,2003 ~ 7,2003

Mechanical Engineering, Université Pierre et Marie Curie - Paris 6

PhD thesis Mechanical, Acoustics and Electronic Sciences

This PhD is in co-tutorship with the University of Genoa

Main courses: Dynamics of Systems and Mechanical Modelling, Informatics and Robotics, Project Leading, Surgical Robotics Summer European Seminar

Final project title: Development of micro tools for surgical applications

<http://www.cepolina.com/download/finger-t.pdf>

9,1993 ~ 4,1999

School of Mechanical Engineering, University of Genoa, Italy

5 years Degree on Mechanical Engineering and Design of Machines

Main courses: Analysis, Chemistry, Physics, Industrial Design, Geometry, Mechanics, Material Science, Mechanics of Machines, Mechanical Technology, Electronics, Mechanical Plants, Measures and Industrial Instruments, Modelling and Simulation of Mechanical Systems, etc.

Final project title: Cleaning robot: analysis and project

<http://www.cepolina.com/download/gecko-t.pdf>

SCORE: 105/110

Patent: “Motion system for robots with arms and depression cups” The patent

describes the actuation of the climbing robot of the 5 years degree final project. Actuation is provided by the movement of two suction cups. Reference: ITGE990059

Patent: "Adaptive clamp for the collection of flexible elements in multi or single layer" Clamp to be used as robot end effector for fabric manipulation. The clamp can grasp fabrics having different thickness and softness. Reference: ITGE20000109

9,1996 ~ 6,1997

Faculty of Engineering, University of Leeds, UK

Ordinary degree of Bachelor of Engineering in Mechanical Engineering

Main courses: Control Option 3TS, Vibration 2, Finite Element Analysis, Robotics, Turbomachinery and Compressible Flow, CAE Systems for Design and Manufacture, Professional Studies, Engineering Project, Computer Integrated Manufacturing, etc.

Final project title: Design and simulation of an all terrain mobile robot

<http://www.cepolina.com/download/leg-t.pdf>

SCORE: 78

9,1988 ~ 6,1993

College C. Colombo, Genoa

Final Diploma in Classical studies

Courses including: Italian, Latin, Old Greek, Mathematics, Chemistry, etc.

SCORE: 51/60

AWARDS AND HONORS

11,2007

SIRI Award "Arturo Baroncelli" for the PhD Thesis

9,2005

The Industrial Robot Highly Commended Award, AirEOD Airplanes Robot

3,2005

Award of a grant from Intuitive Surgical to research on surgical robotics

6,2004

Award of Carige scholarship to research 10 months in California at Intuitive Surgical

6,2004

PTC Awards 2004, Certificate of Design Excellence, GigiAndretti

3,2004

Invited to be chairman of sessions "Robotics medical applications" in ISR'04, Paris

8,2003

Scholarship for "Summer school on Surgical Robotics" Montpellier

7,2002

Award of a scholarship from Italian French University for the PhD "en-cotutelle"

2, 2002

Award of a MIUR scholarship for the 3 years Italian PhD research

4,2001

Award of a scholarship "Leonardo da Vinci" from U.E. to work 4 months in Madrid

4,2000

The Italian degree thesis wins the I° national award UCIMU-manufacturing systems

9,1996

Award of a scholarship "Erasmus" to study in Leeds, UK

WORK EXPERIENCE

6, 2007 ~ 9, 2011

Mechanical Designer at R&D of Bocchiotti S.p.A., Genoa, Italy

Creating a full family of innovative electric plugs, interlocked plugs and electric switches. Design, prototyping and production of a new printing machine able to print on plastic; the printer is now in the market. The work also includes the planning of the activities and the coordination of different industrial partners. The most innovative developed devices are protected by national and international patents.

Patent: "Body for electrical socket or plug", Plastic flexible element used to lock sockets. The plug can be open only using a screwdriver. Reference: EP2104186

Patent: "Interlocked electrical outlet" Electrical outlet where each of the three single fuse housings is individually locked by a locking mechanism. Reference: EP2117086

Patent: "Interlocked electric outlet" Electric outlet where its components are joined to the main frame by means of a screwless connection. Reference: EP2117085

Patent: "Cable gasket device and a main body with the same for electrical outlet or

plug spacer” Flexible gasket, made by rubber and plastic, able to avoid the entrance of water from the back of a plug. Reference: ITMI20080557

Patent: “Electrical appliance for civil series, has hooking part with small plate supported on support line transversal to insertion direction of electrical apparatuses and on longitudinal support line extended in insertion direction” Hooking system used to secure electric switches to their housing. Reference: FR2923094

Patent: “Sistema e metodo per la targatura di componenti”, A new family of fast printers used to print on plastic material for wire marking. Reference: under filing

1, 2006 ~ 5,2007

Mechanical Designer at R&D of D’Appolonia S.p.A., Genoa, Italy

Working in the R&D/Technology Transfer department. Leading the design of innovative products for different industrial sectors. Developing teleoperated climbing robot, marble splitter with shape memory alloy, recognition of fabrics defects by cameras, bridges expansion joint, safety device for motorbike, underwater cuts with diamonds, robots able to sew fabrics and to create dresses.

3, 2005 ~ 11,2005

PhD researcher at R&D of Intuitive Surgical, Sunnyvale, California

PhD training/work at Intuitive Surgical. Setting up and testing the performance of surgical robots in surgical theatre. Intuitive Surgical, located in the Silicon Valley, is World leader in the design and manufacturing of surgical robots.

3, 2002 ~ 7,2002

Pro-Engineer teacher at “Centro Italiano Femminile”, Genoa, Italy

Teaching the 3D solid modeller Pro-Engineer from Parametric Technology Corporation. Number of hours: 69

9, 2001 ~ 12,2001

Mechanical Designer at R&D of Tecnospacec, Genoa, Italy

Consultancy in the company TS Tecnospacec. The work concerns conceptual design of new diamond cutting machines and patent search.

Patent: “Gripping device with flexible elements”, Clamp able to grasp objects of different shape using a lasso; the lasso is made by a flexible element. This invention is suitable for securing underwater robots to oil wells. Reference: WO2005002797

5, 2001 ~ 8,2001

Researcher at “Istituto de Automatica Industrial” CSIC, Madrid, Spain

Making the mechanical design (3D models by Pro-Engineer) and studying the overall control strategy of an underwater robot able to clean the keel of boats. Making the mechanical design of a robot able to clean the windows of skyscrapers.

5, 2000 ~ 3,2001

Green cross civile service at “Croce Verde Pegliese”, Pegli, Italy

Working 10 months in ambulances as civil service in the Redcross of Pegli.

3, 2000 ~ 2,2001

Mechanical Designer at R&D of D’Appolonia S.p.A., Genoa, Italy

Consultancy in the company D’Appolonia S.p.A. Working on “Technology transfer” and mechanical, conceptual, functional and structural design by 3D modeler. Projects were concerning mining, motoring, textile and medicine.

1, 2000 ~ 10,2000

Pro-Engineer teacher at “Centro Italiano Femminile”, Genoa, Italy

Teaching the 3D solid modeler Pro-Engineer from Parametric Technology Corporation. Number of hours: 68

9, 1999 ~ 12,1999

European Patent Office stage, The Hague, Holland

Attending some lectures about patents. The tasks were: to classify some patents in new categories and to verify the originality of new patents. Fields of work: robot and actuators, soldering machines, bottling.

PUBLICATION

International journals

[1]. F. Cepolina, R.C. Michelini, R.M. Molfino, R.P. Razzoli “Char-Robot: design of

- a co-operative equipment for kitchen cleaning and sanitising tasks”, Systems Science Journal, special issue on Virtual reality and mobile/service robots, May 2001
- [2]. R.C. Michelini, F. Cepolina “Gecko, the walls cleaner”, Industrial Robot: An International Journal, Volume 29 Number 6 2002, pp. 538 - 543
- [3]. F. Cepolina, R.C. Michelini, R.C. “A family of co-robotic surgical set-ups”, Industrial Robot: An International Journal, Volume 30 No. 6 2003, pp. 564-574, November 2003, ISSN 0143-991X.
- [4]. F. Cepolina, R.C. Michelini “Review of robotic fixtures for low-invasiveness surgery”, The International Journal of Medical Robotics & Computer Assisted Surgery, Volume 1 No. 1 2004, March 2004 - pp. 43-63
- [5]. S. Costo , F. Cepolina , M. Zoppi and R. Molfino “AirEOD: a Robot for On-board Airplanes Security” Proceedings of the 8th International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines (CLAWAR 2005), Springer, Editors M.O. Tokhi, G.S. Virk and M.A. Hossain, pp. 995-1002
- [6]. R. Molfino, M. Armada, F. Cepolina and M. Zoppi “Roboclimber - the 3 tons spider”, Industrial Robot Journal, Volume: 32 Issue: 2, ISSN 0143-991X, Apr 2005 - pp. 163-170
- [7]. F. Cepolina, B. Challacombe, R.C. Michelini “Trends in Robotic Surgery”, Journal of endourology, 19(8), pp 940-51, Oct 2005
- [8]. F. Cepolina, M. Moronti, M. Sanguineti, M. Zoppi, R.M. Molfino “Roboclimber versus landslides: design and realization of a heavy-duty robot for teleoperated consolidation of rocky walls”, IEEE Robotics and Automation magazine, ISSN: 1070-9932, pp. 23-31, Volume: 13, Issue: 1, March 2006
- [9]. R. Molfino, S. Costo, F. Cepolina, M. Zoppi “The robot AirEOD”, Industrial Robot, IR 33-3 2006, ISSN: 0143-991X, Volume 33 Number 3, 2006, pp. 235 –

National journals

- [10]. F. Cepolina “Robot di pulizia: analisi e progetto” in Proc. of Tecnologie meccaniche Sistemi per Produrre, edited by Direzione Tecnica Ucimu-Sistemi per Produrre, published by Miller Freeman divisione Stammer, Milan, March 2000 - pp. 90-91

International Conferences

- [11]. F. Cepolina, R.C. Michelini, R.M. Molfino, R.P. Razzoli “Domestic-Chores Automation: Multi-Media Analysis and Assessment Study” in Proc. of the XI ADM Intl. Conf. on Design Tools and Methods in Industrial Engineering, Palermo 8-12 December 1999, Volume C - pp. 139-146.
- [12]. F. Cepolina, R.C. Michelini, R.M. Molfino and R.P. Razzoli: “Gecko-Collie - Homecleaning automation of floors, walls, and cupboards” in Proc. of the 3rd Intl. Conf. on Climbing and Walking Robots: CLAWAR 2000, edited by M. Armada and P. Gonzales de Santos, published by Cromwell Press Limited, Madrid, 2-4 October 2000 - pp. 803-811, ISBN 1 86058 268 0.
- [13]. F. Cepolina, R.C. Michelini, R.M. Molfino, R.P. Razzoli “Char-Robot: design of a co-operative equipment for kitchen cleaning and sanitising tasks” European Workshop Ifidicon/Service robot ‘2001, Santorini, Greece, 1 May 2001
- [14]. Anthoine Dietrich Paolo, Cepolina Francesco, Spadoni Fiorenzo

"ROBOCLIMBER Technical solutions", CSIC, Madrid, July 19, 2002

- [15]. F. Cepolina, R.C. Michelini, R.M. Molfino, R.P. Razzoli "Gecko, a climbing robot for walls cleaning" ASER03, 1st International Workshop on Advances in Service Robotics, 13-15 March 2003, Bardolino, Italy, ISBN 3-8167-6268-9
- [16]. P. Anthoine, M. Armada, S. Carosio, P. Comacchio, F. Cepolina, P. González, T. Klopff, F. Martin, R.C. Michelini, R.M. Molfino, S. Nabulsa, R.P. Razzoli, E. Rizzi, L. Steinicke, R. Zannini, M. Zoppi "Roboclimber" ASER03, 1st International Workshop on Advances in Service Robotics, Bardolino, Italy, 13-15 March 2003, ISBN 3-8167-6268-9
- [17]. F. Cepolina, R.C. Michelini "Robots in medicine: a survey of in-body nursing aids. Introductory overview and concept design hints", in Proc. of ISR 2004, 35 International Symposium on Robotics, 23-26 March 2004, Paris, France
- [18]. D. Sallé, P. Bidaud, F. Cepolina "Task based optimization method for the design of modular minimally invasive surgery instruments", Romansy 2004, 15th CISM-IFTToMM Symposium on Robot Design, Dynamics and Control, Montreal, Canada, 14-18 June 2004
- [19]. F. Cepolina, M. Zoppi, G.T. Zurlo, R.M. Molfino "A robotic cleaning agency", Int. Conf. IAS-8 Intelligent Autonomous Systems, Amsterdam, 10-12 March 2004
- [20]. P. Anthoine, M. Armada, S. Carosio, P. Comacchio, F. Cepolina, T. Klopff, F. Martin, R.C. Michelini, R.M. Molfino, S. Nabulsa, R.P. Razzoli, E. Rizzi, L. Steinicke, R. Zannini and M. Zoppi "ROBOCLIMBER: a Four-Legged Climbing Robot for Rocky Slope Consolidation and Monitoring", World Automation Congress (WAC), Seville, Spain, 28 June-1 July 2004
- [21]. F. Cepolina, R.C. Michelini "Self adaptable clamping tools for multi-grasping", in Proc. of IEEE International Conference on Intelligent Manipulation and Grasping IMG 04, Genova, Italy, 1-2 July 2004, ISBN 88 900 426-1-3
- [22]. D. Sallé, F. Cepolina, P. Bidaud "Surgery grippers for Minimally Invasive Heart Surgery", in Proc. of IEEE International Conference on Intelligent Manipulation and Grasping IMG 04, Genova, Italy, 1-2 July 2004, ISBN 88 900 426-1-3
- [23]. F. Morra, R. Molfino, F. Cepolina "Miniature gripping device", in Proc. of IEEE International Conference on Intelligent Manipulation and Grasping IMG 04, Genova, Italy, 1-2 July 2004, ISBN 88 900 426-1-3
- [24]. E. Ullmann, F. Cepolina, M. Zoppi "Upper limb prosthesis for developing countries", in Proc. of IEEE International Conference on Intelligent Manipulation and Grasping IMG 04, Genova, Italy, 1-2 July 2004, ISBN 88 900 426-1-3
- [25]. U. Battista, F. Cepolina, S. Costo, M. Zoppi "Videogame for safe flights", CLAWAR/EURON Workshop on Robots in Entertainment, Leisure and Hobby-ELH '04, Wien 2-4 December
- [26]. F. Cepolina, M. Zoppi "Snail Surgeon: A New Robotic System for Minimally Invasive Surgery", RoMoco'05, Fifth International Workshop on Robot Motion and Control, June 23-25, 2005, Dymaczewo, Poland
- [27]. F. Cepolina, A. Khan, R. Molfino, Università di Genova, Italy "Mini-rover for Mars exploration", Workshop on Space Applications TUAS House, Otaniementie 17, Espoo, Helsinki, 19th June 2005

National conferences

[28]. F. Cepolina, R.C. Michelini, R.M. Molfino, R.P. Razzoli “Il Char-robot per le pulizie domestiche: animazione e verifiche operative”. Workshop I09X, Centro S. Elisabetta, Università di Parma, Parma 6,7,8 September 2000.

[29]. P. Anthoine, L.E. Bruzzone, F. Cepolina, R. Molfino “Metodologia di progettazione meccatronica per robotica di servizio”, 1a National conference “Sistemi Autonomi Intelligenti e Robotica Avanzata”, Frascati, Italy, 29-31 October 2002.

[30]. F. Cepolina, R.C. Michelini “Progetto di Dispositivi di Robotica Chirurgica”. Convegno Nazionale XIV ADM – XXXIII AIAS, Innovazione nella Progettazione Industriale, Politecnico di Bari, 31 August-2 September 2004

PATENT

[1]. ITGE20000109, 30/11/2000, “Adaptive clamp for the collection of flexible elements in multi or single layer”

[2]. ITGE990059, 01/12/2000, “Motion system for robots with arms and depression cups”

[3]. WO2005002797, 13/01/2005, “Gripping device with flexible elements”

[4]. ITMI20080557, 01/04/2008, “Cable gasket device and a main body with the same for electrical outlet or plug spacer”

[5]. EP2104186, 21/03/2008, “Body for electrical socket or plug”

[6]. EP2117086, 08/05/2008, “Interlocked electrical outlet”

[7]. EP2117085, 08/05/2008, “Interlocked electrical outlet”

[8]. FR2923094, 01/05/2009, “Electrical appliance for civil series, has hooking part with small plate supported on support line transversal to insertion direction of electrical apparatuses and on longitudinal support line extended in insertion direction”

[9]. Italian patent, year 2010, “Sistema e metodo per la targatura di componenti”, under filing

SKILLS

(1) Language skills

Italian (mother language), English (very good knowledge), French (good), Spanish (good)

(2) Technical Skills

Language: Pascal, Basic, HTML, ASP, JAVA, SQL

Systems: MS-DOS, MAC-OS, UNIX, Windows XP, Windows Vista, Server IIS 6.0

Software: Solid modellers: Euclid, ProEngineer, SolidWorks, Multibody analysers: DADS, ProMechanica, Ansys, Computational analyses: FEM and Thermal, Simulation languages: Modsim III, Simulink, ODE 3D dynamics library

EXTRACURRICULAR ACTIVITIES

Several periods of travel spent abroad in Holland, France, Japan and California. Theatre, skiing, swimming, canoe, sailing, photography

REFEREE

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Spanish National Research Council – CSIC
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