Curriculum Vitae

Erla Silvia

PERSONAL DATA

Name	Silvia Erla
Birth Date	21^{th} December 1983
Place of Birth	Trento, Italy
Home Adress	Via Perini, 56 38100 Trento, Italy
Nationality	Italian
Telephone	+39 0461 882776
E-Mail	*silvia.erla@email.unitn.it* *silvia.erla@gmail.com*

EDUCATION

July 2002	School–leaving examination, High school "Galileo Galilei" in Trento, Italy.
December 2005	Bachelor Degree in Physics (Laurea Triennale), University of Trento, Italy. Thesis title: "Un modello semplice per il decadimento alfa" (A simple model for alpha decay). Supervisor: Prof. Giuseppina Orlandini, Dept. of Physics, University of Trento.

February 2008	Msc. Degree (Laurea Specialistica) in Physics and Biomedical Technologies, University of Trento, Italy. Thesis title: "Caratterizzazione della complessità dell'attività neuroelettrica corticale nell'uomo tramite predizione non lineare del segnale EEG" (Characterization of the complexity of human neuro-cortical activity by nonlinear prediction of the EEG signal). Supervisor: Prof. Renzo Antolini, Prof. Giandomenico Nollo, M.D. Enzo Tranquillini. Data recording in collaboration with the Neurology Division of the S. Chiara Hospital of Trento.

PROFESSIONAL EXPERIENCE

April–August 2008	Grant–holder of the Biophysics and Biosignal Laboratory, Department of Physics, University of Trento, Italy. Sviluppo di metodologie per la misura del grado di interazione tra biosegnali. Realizzazione, implementazione e test di metodi di analisi lineare e non lineare per la caratterizzazione di segnali di interesse biomedico quali EEG e ECG. In collaboration with S. Chiara Hospital in Trento, Italy.
August–November 2008	Grant–holder of the Centre for Mind/Brain Sciences (CIMeC), University of Trento, Italy (Borsa pre–dottorato). Development of methods for the characterization of complexity changes in MEG signals recorded during the execution of visuo–tactile tasks. In collaboration with the Biophysics and Biosignal Laboratory, Department of Physics, University of Trento.
Present Appointment	PhD Student in Cognitive and Brain Sciences.

LANGUAGES

Mother tongue	Italian.
Other languages	Scientific English: good knowledge (spoken and written), Cambridge PET level B1, 2003. German: good knowledge (spoken and written), Zertifikat Deutsch Goethe Institut, 2001.

SCIENTIFIC ACTIVITY

Research interests	PhD studies: EEG and MEG signal processing, EEG/MEG source imaging and correlations between EEG dynamics and fMRI responses. In particular, development of algorithms in Matlab aiming a better understanding of the cortical complexity and connectivity in neurophysiological multichannel recordings.

	Msc. Degree studies: EEG complexity in healthy subjects and stroke patients during photic stimulation.
Scientific collaborators	Neurology Division of the S. Chiara Hospital of Trento (MD Orrico Daniele and MD Tranquillini Enzo).
	MEG Center, Eberhard–Karls-University of Tübingen, Germany.
Awards and Scholarship grants	Grant from the Società Italiana di Biofisica Pura e Applicata (SIBPA) to attend the XIX National Congress SIBPA. Rome, Italy. September 17–20, 2008.
	Grant from the COST Action BM0601 of the EU to attend the Consciousness and its Measures Congress and Satellite event (Foundation Themes for Advanced EEG/MEG Source Analysis). Limassol, Cyprus. November 29–December 4, 2009.
	Grant from the COST Action BM0601 of the EU to attend the COST BM0601 and COST BM0605 Workshops: Neurodynamic insight into functional connectivity, cognition and consciousness 2010. Dubrovnik, Croatia. March 26–27, 2010.
Reviewer activity	Member of MEDICON 2010 programme committee.
Seminars	Erla S, "Mappe di complessità dell'attività neurocorticale". Analisi quantitativa dell'EEG. Dalla clinica alla ricerca e ritorno. S. Chiara Hospital, Trento, Italy. April 24, 2008.
	Erla S, "Partial Directed Coherence (PDC) analysis of MEG data during visual and tactile tasks". Research Seminar. CIMeC–Mattarello, Italy. March 11, 2009.
	Erla S, "Feature–based Fusion of Medical Imaging Data". Topic Seminar-Neuroimaging Methods Course. CIMeC–Palazzo Fedrigotti, Rovereto, Italy. May 14, 2009.
Publications	Publications and Conference Proceedings (p.4).
Congress activity	Attendance at Courses, Conferences and Workshops (p.6).

PUBLICATIONS

2009 **Erla S**, Faes L, Tranquillini E, Orrico D, Nollo G: "Multivariate Autoregressive Model with Instantaneous Effects to Improve Brain Connectivity Estimation". International Journal of Bioelectromagnetism, 11(2): 74–79, 2009.

2010 **Erla S**, Faes L, Nollo G: "Quantifying changes in EEG complexity induced by photic stimulation". Methods of Information in Medicine (in press).

CONFERENCE PROCEEDINGS

2007 **Erla S**, Greiner S, Faes L, Orrico D, Tranquillini E, Lisanti M, Nollo G: "Predictability maps of the brain electrical activity". Proceedings of the Neuromath Workshop 2007; 45–46. Rome, Italy. December 4–5, 2007.

Faes L, **Erla S**, Greiner S, Ki H Chon, Nollo G: "Time varying nonlinear prediction of EEG signals". Proceedings of the Neuromath Workshop 2007; 47–48. Rome, Italy. December 4–5, 2007.

2008 Faes L, **Erla S**, Nollo G: "Quantifying the Complexity of Short-Term Heart Period Variability through K-Nearest Neighbor Local Linear Prediction". Computers in Cardiology 2008; 35:549–552. Bologna, Italy. September 14–17, 2008.
DOI: 10.1109/CIC.2008.4749100

Erla S, Faes L, Greiner S, Lisanti M, Orrico D, Tranquillini E, Antolini R, Nollo G: "Quantification of the Complexity of the Cortical Electrical Activity during Visual Stimulation". Proceedings of the XIX Congresso Nazionale della Societ Italiana di Biofisica Pura e Applicata (SIBPA) 2008; 45–46. Rome, Italy. September 17–20, 2008.

Greiner S, Tranquillini E, **Erla S**, Orrico D, Lisanti M, Faes L, Nollo G, Antolini R: "Detection of weak frequency coupling in EEG signals by combination of second order spectral analysis and statistical analysis". Proceedings of the XIX Congresso Nazionale della Societ Italiana di Biofisica Pura e Applicata (SIBPA) 2008; 44–45. Rome, Italy. September 17–20, 2008.

2009 **Erla S**, Faes L, Nollo G: "Robust Estimation of Partial Directed Coherence by the Vector Optimal Parameter Search Algorithm". Proceedings of the 4th International IEEE EMBS Conference on Neural Engineering 2009; 734–737. Antalya, Turkey. April 29–May 2, 2009.
DOI: 10.1109/NER.2009.5109401

Erla S, Faes L, Tranquillini E, Orrico D, Nollo G: "Multivariate Autoregressive Model with Instantaneous Effects to Improve Brain Connectivity Estimation". Proceedings of the 7th NFSI & ICBEM 2009 Conference (CD). Rome, Italy. May 28–31, 2009.

Erla S, Faes L, Nollo G: "Quantifying changes in EEG complexity induced by photic stimulation". Proceedings of the 6th International Workshop on Biosignal Interpretation 2009; 212–215. New Haven, CT, USA. June 23–26, 2009.

2010 Papadelis C, Arfeller C, **Erla S**, Nollo G, Plewnia C, Braun C: "Visuo-motor integration enhances coherent sources in the human brain". Proceedings of the 17th International Conference on Biomagnetism Biomag 2010. Dubrovnik, Croatia. March 28–April 1, 2010.

Erla S, Faes L, Papadelis C, Borchers S, Arfeller C, Braun C, Nollo G: "Quantification of Power and Coherence of the Electrophysiological Activity of Brain Areas Involved in a Visuo-Tactile Task". Proceedings of the 17th International Conference on Biomagnetism Biomag 2010. Dubrovnik, Croatia. March 28–April 1, 2010.

Erla S, Papadelis C, Braun C, Faes L, Nollo G: "Power changes due to visuo-motor task in scalp EEG and MEG source signals". Proceedings of the COST BM0601 and COST BM0605 Workshops: Neurodynamic insight into functional connectivity, cognition and consciousness 2010. Dubrovnik, Croatia. March 26–27, 2010.

ATTENDANCE AT COURSES, CONFERENCES AND WORKSHOPS

Poster presentation	"Predictability maps of the brain electrical activity". Neuromath Workshop 2007; Rome, Italy. December 4–5, 2007.
Poster presentation	4th International Summer School on Emerging Technologies in Biomedicine (Advanced Methods For The Estimation Of Human Brain Activity And Connectivity, Applications to Rehabilitation Engineering); Patras, Greece. June 29–July 4, 2008.
Poster presentation	"Quantification of the Complexity of the Cortical Electrical Activity during Visual Stimulation". XIX Congresso Nazionale della Societ Italiana di Biofisica Pura e Applicata (SIBPA); Rome, Italy. September 17–20, 2008.
Poster presentation	"Detection of weak frequency coupling in EEG signals by combination of second order spectral analysis and statistical analysis". XIX Congresso Nazionale della Societ Italiana di Biofisica Pura e Applicata (SIBPA); Rome, Italy. September 17–20, 2008.
Talk	"Robust Estimation of Partial Directed Coherence by the Vector Optimal Parameter Search Algorithm". 4th International IEEE/EMBS Conference on Neural Engineering 2009; Antalya, Turkey. April 29–May 2, 2009.
Attendance	CIMeC MEG–system Course; Mattarello (Trento), Italy. May 11–12 2009
Poster presentation	"Advanced signal processing methods for measuring cortical complexity and connectivity in neurophysiological multichannel recordings". Symposium on Magnetoencephalography (for the inauguration of the CIMeC MEG Laboratory at the University of Trento). Mattarello (Trento), Italy. May 27, 2009.
Poster presentation	"Multivariate Autoregressive Model with Instantaneous Effects to Improve Brain Connectivity Estimation". 7th NFSI & ICBEM 2009 Conference. Rome, Italy. May 28–31, 2009.
Attendance	RWCP (Rovereto Workshop on Crossmodal Plasticity) 2009. Rovereto (Trento), Italy. August 27–29, 2009.
Attendance	XXVIII Scuola Annuale di Bioingegneria (Bioingegneria per le neuroscienze cognitive) 2009. Bressanone (Bolzano), Italy. September 7–11, 2009.
Attendance	Rovereto Attention Workshop, Attention and Awareness 2009. Rovereto (Trento), Italy. October 29–31, 2009.
Attendance	Consciousness and its Measures. Limassol, Cyprus. November 29–December 1, 2009.
Attendance	Foundation Themes for Advanced EEG/MEG Source Analysis: Theory and Demonstrations via Hands-on Examples (Satellite Course of Consciousness and its Measures). Nicosia, Cyprus. December 2–4, 2009.