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Positions held

- 2004-present Project scientist II in Scott Makeig's laboratory at the institute of Neural Computation at UCSD (University of California San Diego).
- Sept-Nov 2004 Visiting faculty for the Birla Institute of Technology, Bombay, India. Setting up a brain-computer interface laboratory and teaching the neuroscience course for the Master of Consciousness Studies.
- 2003-2004 Post-doctoral fellow in Scott Makeig's laboratory at the institute of Neural Computation at UCSD (University of California San Diego).
- 2000-2003 Post-doctoral fellow in Terry Sejnowski's laboratory at the Salk Institute for Biological Studies and visiting scholar at the institute of Neural Computation at UCSD (University of California San Diego).
- 1997-2000 PhD student (MNERT 3 years fellowship from French government) in CNRS Brain and Cognition Center (CERCO), Toulouse, France.
- 1996-1997 Research internship directed by Y. Burnod, CREARE (internship associated with DEA of Cognitive Science). Subject: Using Sigma-Pi neural networks to model a visuo-motor initiation task.
- Summer 1996 Research internship directed by S. Thorpe, CERCO, Toulouse. Subject: Digit Recognition using an asynchronous neural network of integrate-and-fire neurons.
- Summer 1995 Research Internship directed by Y. Burnod, CREARE, Paris. Subject: Programming a compartmental and canal based Hodgkin Huxley simulator package.

Education

- Winter 2002 FENS winter school on "dynamic aspects of brain functions: methodologies, concepts, models", Kitzbuhel, Austria (35 participants).
- Winter 2001 Academic Writing Classes (27 hours), University of San Diego California, A+ grade.

- August 2001 Workshop for the Analysis of Neural Data, Marine Biology Laboratories, Woods Hole, USA (20 participants).
- 1997-2000 Research Thesis "Rapid visual processing in monkeys, humans and machines: a forward-looking view". Co-directed by S. Thorpe and M. Fabre-Thorpe, CERCO, Toulouse, France.
- Sept. 1999 EU Advanced Course in Computational Neuroscience, ICTP, Trieste, Italy (30 participants).
- 1996-1997 DEA of Cognitive Sciences (courses associated with PhD), Paris VI University, Paris, France.
- 1995-1996 Maîtrise d'Informatique (Programming level 2), Paris XII University - Rank 'Major' (1st) with jury's felicitations.
Maîtrise de Biologie (Cell Biology level 2), Paris XII University - Rank 'Major'.
- 1994-1995 Licence d'Informatique (Programming level 1), Paris XII University - Rank 'Major'.
Licence de Biologie (Cell Biology level 1), Paris XII University - Rank 'Major'.
- 1992-1994 'DEUG SSM' (bachelor of mathematics and physics), Paris XII University - Rank 'Major' for two consecutive years among about 1000 students.

Honors and fellowships

- 2004 Mind and Life Foundation award (10,000 dollars)
- 2004 Travel grant award from French ministry of research (5,000 euros)
- 2002 Bretencourt Schueller Foundation award (20,000 euros)
- 2001 Medical Research Foundation fellowship (20,000 euros)
- 2000 Naturalia et Biologia Foundation fellowship (1,500 euros)
- 2000 Computer science organization INRIA fellowship (37,000 euros)
- 1997 French government MNERT thesis fellowship (40,000 euros)
- 1992-1996 Ranked Major (first) for B.S. and both MSEE (passed simultaneously)

Teaching Experience

- Oct. 2004 Main lecturer for the first EEGLAB workshop on analysis of single-trial EEG data, La Jolla, CA. Teaching single-trial surrogate statistics, independent component analysis and spectral analysis of EEG data for a total of 7 hours to a group of 30 participants from 11 countries.
- fall 2004 Designed and taught the neuroscience course for the first year of the Master on consciousness studies of the renowned Birla Institute of

	technology and science, Pilani, India. Teaching neuroscience methodology, neural networks, binding problem, visual attention, neural correlates of consciousness, and neurofeedback (40 hours).
1998-2000	Neuroscience tutorials for undergraduate students at Paul Sabatier University (Toulouse III, France). 75 hours. Topics involved neurons and synapses architecture and dynamics, auditory system, visual system anatomy and psychophysics, motor system, brain pharmacology.
1999-2000	Neuroscience lectures (undergraduate training for adults) at Paul Sabatier University (Toulouse III, France). 12 hours. Topics involved auditory system, visual system anatomy and psychophysics, motor system.
1999-2000	Statistics lectures/tutorials (half lecture, half tutorial) to undergraduate students. University of Mirail (Toulouse II, France). 40 hours.
1999	Tutorials for undergraduate students on experiment design at Paul Sabatier University (Toulouse III, France). 45 hours.
1992-1997	Private Teaching for high-school and undergraduate students in mathematics and physics (more than 500 hours).

Professional Activities

1. Workshop organization: Co-organized the first 3-day EEGLAB workshop, La Jolla, CA, 2004. Co-organized the first and second EEGLAB 3-day bootcamp, La Jolla, CA, 2002 and 2003. Organized an "Independent Component Analysis and Imaging Techniques" workshop session at the Computational Neuroscience Meeting 2001 (Pacific Grove, USA). Organized a "Spike-time based plasticity" workshop session at the Computational Neuroscience Meeting 2000 (Bruges, Belgium).
2. Gave talks at the 10th conference on "Toward a science of consciousness" (Tucson, AZ, 2004), the 3rd International Conference on ICA and Blind Source Separation (Del Mar, CA, 2001), the monthly Salk Institute research talks (2001, La Jolla, USA), the monthly Sloan Center for Theoretical Biology research talks (2001, La Jolla, USA), the Annual French Neuroscience Meeting 2001 (Toulouse, France), the Annual Symposium on Neural Computation 2001 (La Jolla, USA), the Annual Computational Neuroscience Meeting 2001 (Pacific Grove, USA), the Annual Meeting of the French Society of Psychology 1999 (Toulouse, France), and a variety of small workshops and laboratories (MIT, Neuroscience Institute,...).
3. Presented papers at the Computational Neuroscience Meeting (1998-2000), the Neuroscience conference (2001), the Cognitive Neuroscience Meeting (2000, 2002, 2004), the European Conference of Visual Perception (1999-2000) and a variety of smaller conferences and workshops.
4. Review submitted papers for Proceedings of the National Academy of Sciences USA, Cerebral Cortex, Neuroimage, European Journal of Neuroscience, Clinical Neurophysiology, Psychophysiology, Brain Research, Neural Computation, NIPS, Journal of Computational neuroscience, IEEE Transactions on Biomedical Engineering, IEEE Signal Processing Letters, IEEE Transactions on Systems, Man, and Cybernetics, Neurocomputing, IEE Proceedings - Vision, Image and

Signal Processing, and The Iranian Journal of Electrical and Computer Engineering.

5. Write fellowships applications (see Honors and fellowships above) and grants. Co-investigator on self-written NIH grant for supporting development of new tools for analysis of EEG data (the score for this grant was ranked close to perfect in the 0.7 percentile).
6. Monthly research talk organizer and webmaster of the Society for Research Fellow at The Salk Institute for Biological Studies from 2001 to 2003 (www.srf.salk.edu).
7. Member of the Cognitive Neuroscience Society since 2000, the Society of Neuroscience 2000-2003, and of the French Society of Neuroscience from 1999 to 2002.
8. Webmaster for EEGLAB software web page and administrator of two mailing lists (eeglalist@sccn.ucsd.edu containing 2000 users and eeglalnews@sccn.ucsd.edu containing 3500 users). Also distribute the only complete EEG/ERP experiment (4 Gb of data) publicly available on the Internet.
9. Write letters of recommendations as a third party reference for colleagues in the field and graduate students.
10. Ongoing remote collaboration with Robert Oostenveld (University of Nijmegen, The Netherlands) for localizing equivalent dipoles of ICA components, Rael Cahn and Franz Vollenweider (Heffter Institute, Zurich, Switzerland) for studying EEG correlates of extra-ordinary states of consciousness, Tanji Kazuyo (Tohoku University, Japan / NIMH) for advanced analysis of intra-cranial EEG recordings.

Research software developed

SpikeNET: neural network simulator package to build large networks of integrate and fire neurons (available at www.sccn.ucsd.edu/~arno/spikenet/).

EEGLAB: Matlab software for advanced EEG signal processing and single trial rejection (available at www.sccn.salk.edu/eeglab).

Link with industry

Spikenet technology: Inventor (25%), shareholder of the company (estimated at 3 million euros), and developer of the original software kernel.

Lilly pharmaceutical: 2-year academic consulting contract (co-direction of three bio-statistics student).

Private consulting for the American Navy in San Diego and Washington.

Skills

Languages: Fluent in English and French. Working knowledge of Spanish and Persian.

Experiment: monkey psychophysics training (3 years), human EEG recording and experiment design (7 years).

Programming languages: Expert knowledge of Matlab, C++, C, Java, Pascal, and Perl. Working knowledge of 0x86 and 68xxx assembly language, Lisp, Ada, SQL, OCCAM, Basic, javascript, php. Familiar with all versions of Unix, Mac OS and Windows.

Research Software: Expert knowledge of EEGLAB, Neuron, Statview, Neuroscan. Working knowledge of Besa 99, E-Prime, Genesis, Xpp.

Personal Interests

Sports: Swimming (6 years), TaeKwonDo (8 years), Roller Blades, Yoga.
Hobbies: Guitar and drums, meditation.

Publications

- Delorme, A.**, Oostenvelt, R., Sejnowski, T., Makeig, S. Independent Component Analysis Separates High-Dimensional EEG Data into Spatially Compact Brain Sources. *To be submitted to Neuroimage*.
- Rosseinsky N., **Delorme, A.**, Cooper R., Luu, P., Tucker, D., Makeig, S. Brain synchronization events follow cognitive challenges. *To be submitted to Nature*.
- Delorme, A.**, Westerfield, M., Makeig, S. Increased far frontal theta-band activity precedes fast reaction time during visual selective attention. *To be submitted to Nature Neuroscience*.
- Macé M., Richard, G., **Delorme, A.**, Fabre-Thorpe, M. Rapid categorization of natural scenes in monkeys: target predictability and processing speed. *Neuroreport, in press*.
- Onton, J., **Delorme, A.**, Makeig, S. Event-related EEG dynamics during short term memory. *Neuroimage, in revision*.
- Tanji, K., Suzuki, K., **Delorme, A.**, Shamoto, H., Nakasato, N. Othographic-dependent Higher Oscillatory Activity in the Basal Temporal Area. *J of Neuroscience, in press*.
- Debener, S., Makeig, S., **Delorme, A.**, Engel, A.K. What is novel in the novelty oddball paradigm? Functional significance of the novelty P3 event-related potential as revealed by independent component analysis. *Cognitive Brain Research, in press*.
- Sornborger, A., Yokoo, T., **Delorme, A.**, Sailstad, C., Sirovich, L. Extraction of Average and Differential Dynamical Responses in Stimulus-locked Experimental Data. *Journal of Neuroscience Methods, in press*.
- Delorme, A.**, Makeig, S. (2004) EEGLAB: an open source toolbox for analysis of single-trial EEG dynamics including independent component analysis. *Journal of Neuroscience Methods*, 134(1), 9-21.
- Makeig, S., Debener, S., Onton, J., **Delorme, A.** (2004) Mining event-related brain dynamics. *Trends in Cognitive Neuroscience*, vol 8(5), 204-210.
- Delorme, A.**, Rousset, G., Fabre-Thorpe M. (2004) Interaction of Bottom-up and Top-down processing in the fast visual analysis of natural scenes. *Cognitive Brain Research*, 19(2), 103-113.
- Makeig, S., **Delorme, A.**, Westerfield, M., Jung, T.P., Townsend, J., Courchesne, E., Sejnowski, T.J. (2004) Electroencephalographic Brain Dynamics Following Manually Responded Visual Targets. *PLOS*, 2(6), 747-762.
- Delorme, A.**, Makeig, S. (2003) EEG changes accompanying learning regulation of the 12-Hz EEG activity. *IEEE Transactions on Rehabilitation Engineering*, 11(2), 133-136.
- Delorme, A.** (2003) Early Cortical Orientation Selectivity: How Fast Shunting Inhibition Decodes the Order of Spike Latencies. *Journal of Computational Neuroscience*, 15, 357-365.

- Delorme, A.**, Thorpe, S. (2003). SpikeNET: An Event-driven Simulation Package for Modeling Large Networks of Spiking Neurons, *Network: Comput. Neural Syst.*, 14, 613-627.
- Delorme, A.**, Makeig, S., & Fabre-Thorpe, M. & Sejnowski (2002). From single-trial EEG to brain area dynamics. *Neurocomputing*, 44-46, 1057-1064.
- Delorme, A.**, Thorpe, S. (2001) Face processing using one spike per neuron: resistance to image degradation. *Neural Networks*, 14(6-7), 795-804.
- Perrinet, L., **Delorme, A.**, Thorpe, S. (2001) Network of integrate-and-fire neurons using Rank Order Coding A: how to implement spike timing dependant plasticity. *Neurocomputing*, 38-40(1-4), 817-822.
- Delorme, A.**, Perrinet, L., Thorpe, S. (2001) Network of integrate-and-fire neurons using Rank Order Coding B: spike timing dependant plasticity and emergence of orientation selectivity. *Neurocomputing*, 38-40(1-4), 539-545.
- Thorpe, S., **Delorme, A.**, VanRullen, R. (2001) Spike based strategies for rapid processing. *Neural Networks*, 14(6-7), 715-726.
- VanRullen, R., **Delorme, A.** & Thorpe S.J. (2001). Feed-forward contour integration in primary visual cortex based on asynchronous spike propagation. *Neurocomputing*, 38-40(1-4), 1003-1009.
- Delorme, A.**, Richard, G., & Fabre-Thorpe, M. (2000). Ultra-rapid Categorisation of natural scenes does not rely on color cues: A study in monkeys and humans. *Vision Research*, 40(16), 2187-2200.
- Fabre-Thorpe, M., **Delorme, A.**, Marlot, C., & Thorpe, S.J. (2000). A limit to the speed of processing in Ultra-Rapid Visual Categorization of novel natural scenes. *Journal of Cognitive Neuroscience*. 13(2), 171-180.
- Thorpe, S.J., **Delorme, A.**, VanRullen, R., Paquier, W. (2000) Reverse engineering of the visual system using networks of spiking neurons. *IEEE Circuits and Systems*, 4, 405-408.
- Delorme, A.**, Gautrais, J., VanRullen, R., & Thorpe, S.J. (1999). SpikeNET: A simulator for modeling large networks of integrate and fire neurons. *Neurocomputing*, 26-27, 989-996.
- Delorme, A.**, Richard, G., & Fabre-Thorpe, M. (1999). Rapid processing of complex natural scenes: a role for the magnocellular pathway. *Neurocomputing*, 26-27, 663-670.
- Fabre-Thorpe, M., **Delorme, A.**, & Richard, G. (1999). Singes et Hommes face au monde visuel : la Catégorisation. *Primatologie*, 2, 111-139.
- Van Rullen, R., Gautrais, J., **Delorme, A.**, & Thorpe, S. (1998). Face processing using one spike per neurone. *Biosystems*, 48(1-3), 229-239.

Other published manuscripts (non-peer review journals)

- Delorme, A.**, Vanrullen, R., Gautrais, J., Thorpe, S. (1998) SpikeNET : un logiciel pour modéliser de larges réseaux de neurones impulsionnels et asynchrones. Proceedings of the 10th conference on Neurosciences et sciences de l'ingénieur, Dinard, France.
- Paquier, A., **Delorme, A.**, Vanrullen, R., Thorpe, S. (2000) Détection de mouvements apparents par codage asynchrone. Proceedings of the 10th conference on Neurosciences et sciences de l'ingénieur, Colmar, France.
- Delorme, A.** Makeig, S., Sejnowski, T. (2001) Automatic artifact rejection for EEG data using high-order statistics and independent component algorithm. Proceedings of the 3rd international conference on ICA, Del Mar, CA.
- Delorme, A.** (2000). Rapid visual processing in monkeys, humans and machines: a forward-looking view. Ph.D. Thesis in French (314 pages), Paul Sabasier University, Toulouse, France. Abstract also published in 2000 in the In Cognito revue, 18, p41.