CURRICULUM VITAE OF ALBERTO CAPURRO

Born in Montevideo (Uruguay) on September 25th of 1964 (Uruguayan and Italian citizen).

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Academic education

• PhD in Biology oriented to Neuroscience (1996-1999) at PEDECIBA (United Nations sponsored Program for Development of Basic Science, Faculty of Science, Universidad de la República, Montevideo, Uruguay).

• MSc in Biology oriented to Neuroscience (1991-1994) at PEDECIBA (United Nations sponsored Program for Development of Basic Science, Faculty of Science, Universidad de la República, Montevideo, Uruguay).

• MD (1983-1991) at the Faculty of Medicine of the "Universidad de la República" (Montevideo, Uruguay).

Professional experience and scientific training

• **2012** Research Affiliate at the Department of Engineering of the University of Leicester (UK).

• **2010-2011** Research Associate at the Department of Engineering of the University of Leicester (UK) to study neural codes and computational models for olfactory processing in the brain of the moth, under the direction of Dr. Timothy C. Pearce (funded by EU Framework VI FET Project iCHEM).

• **2008-2009** Research Associate at the Neuro-Engineering Lab (Department of Engineering) of the University of Leicester (UK) to work with single cell recordings from epileptic human subjects during visual perception tasks, EEG recordings and gaze tracking, under the direction of Prof. Rodrigo Quian Quiroga (funded by MRC).

• **2006-2008** Post-doctoral position of the Bernstein Center for Computational Neuroscience Freiburg at the Section Epileptology of the University Clinic (Albert-Ludwigs- University, Freiburg, Germany) to develop animal models of temporal lobe epilepsy (hippocampal kindling) and intervention with electrical stimulation under the direction of Prof. Ad Aertsen and Prof. Andreas Schulze-Bonhage.

• **2002-2005** Post-doctoral position at the Mathematical Physics Department of São Paulo University (USP) to develop computational models of heart rate variability and respiration under the direction of Prof. Coraci P. Malta and supported by FAPESP (Brazil).

• **2001** "European Union Advanced Course in Computational Neuroscience 2001" (ICTP, Trieste, Italy, August 2001). Supported by "European Union Advanced Course in Computational Neuroscience".

• **1997-1998** Post-doctoral position (18 months) at the Biocybernetics laboratory of the Biophysical Engineering Department of Osaka University (Japan) to study neuron models and random process under the direction of Prof. S. Sato and Dr. Khashayar Pakdaman. Supported by JSPS post-doctoral fellowship (Japan) and by a grant from the Ministry of Culture Education and Sports of Japan.

• **1996-1997** Training period of 5 months (supported by PEDECIBA, Uruguay) at the Physics Department (CONICET) of the "Universidad Nacional de La Plata" (Argentina) to study electroencephalogram and non-linear dynamics, under the direction of Prof. Angel Plastino.

• **1996-2004** Assistant Researcher at the Neurophysiology Department of the Institute for Biological Research "Clemente Estable" (Ministry of Education and Culture of Uruguay). The Neurophysiology Department is associated to the Department of Physiology of Faculty of Science (Universidad de la República, Montevideo).

• **1994-1995** Training period of 9 months (supported by BID-CONICYT, Uruguay) to learn intracellular recordings in rat hippocampus at the Neurophysiology laboratory of the Institute "Ramon y Cajal" (CSIC, Madrid, Spain) under the direction of Prof. W. Buño.

Teaching experience

• Collaborated with the supervision of the degree thesis in Bioengineering of L.A. Gopalakrishnan (Department of Engineering, University of Leicester, 2010).

• Collaborated with the supervision of PhD thesis in Neuroscience of Maryam Ahmadi Shapourabadi (Department of Engineering, University of Leicester, 2009).

• Collaborated with the supervision of the MSc thesis in Neuroscience of Joacir Cordeiro at BCCN Freiburg (2007-2008).

• Co-director of the MSc thesis in Biology oriented to Neuroscience (PEDECIBA, Faculty of Science, Universidad de la República, Montevideo) of Rossana Perrone (2000-2004).

• Assistant in the practical classes of the undergraduate course "Physiology" (2000 and 2001), Faculty of Science, Universidad de la República, Montevideo.

• Assistant in the practical classes of the postgraduate course "Neuroethology" (PEDECIBA, Faculty of Science, Universidad de la República, Montevideo) directed by Prof. O. Macadar (1999).

• Organizer of the postgraduate course "Time Series" (PEDECIBA, Faculty of Science, Universidad de la República, Montevideo) directed by Prof. Ruben Budelli (1999).

• Assistant in the practical classes of the "International School of Neuroscience (IBRO)" in the editions held at Montevideo in 1996, 2000, 2001 and 2002.

• Honorary assistant in the practical classes of the undergraduate course "Introduction to Biology" of 1994 and 1995 (Faculty of Science, Universidad de la República, Montevideo), directed by Prof. Elio Garcia-Austt.

Languages

• Spanish (native language).

• English: very good comprehension, speaking, reading and writing.

• Portuguese: good comprehension, speaking and reading, reasonable writing.

Computational experience

User of Windows, Macintosh and Linux. Experience in data acquisition with Spike2, Axotape and Cheetah5. Experience in programming and data analysis with Matlab, including spike sorting (Wave_Clus), psychtoolbox and EEGLAB. Experience in numerical simulations with Matlab, C++ and Neuron.

Articles published in international journals

• Capurro A, Olsson S, Kuebler L, Baroni F, Kárpáti Z, Dekker T, Hansson BS, Pearce TC (2012) Temporal features of spike trains in the moth antennal lobe revealed by a comparative time-frequency analysis. Submitted to *PLoS ONE*.

• Capurro A, Baroni F, Olsson S, Kuebler L, Karout S, Hansson BS and Pearce TC (2012) Non-linear blend coding in the moth antennal lobe emerges from random glomerular networks. *Frontiers in Neuroengineering* 5:6. doi: 10.3389/fneng.2012.00006

• Rácz Z, Cole M, Gardner JW, Chowdhury MF, Bula WP, Gardeniers JGE, Karout S, Capurro A and Pearce TC (2012) Design and Implementation of a Modular Biomimetic Infochemical Communication System. *International Journal of Circuit Theory and Applications* (in press).

• Chong KY, Capurro A, Karout S, Pearce TC (2012) Stimulus and Network Dynamics Collide in a Ratiometric Model of the Antennal Lobe Macroglomerular Complex. *PLoS ONE* 7(1): e29602. doi:10.1371/journal.pone.0029602

• Capurro A and Quian Quiroga R (2009) The neural correlates of perceptual awareness. *Psyche* 15: 29-38.

• Diambra L, Malta CP and Capurro A (2009) Long-term oscillations in the sleep/wake cycle of infants. *Physica A* 388:4727-4735.

• Cordeiro JG, Capurro A, Aertsen A, Cordeiro KK, Araújo JC and Schulze-Bonhage A (2009) Improvement in hippocampal kindling analysis through computational processing data. *Arq Neuropsiquiatr.* 67:677-683.

• Diambra L, Capurro A and Malta CP (2007) Constructing the average natural history of HIV-1 infection. *AIP Conf. Proc* 913: 157-162.

• Capurro A, Malta CP, Diambra L, Contreras P and Migliaro ER (2007) Respiratory modulation of heart beat-to-beat interval in diabetic patients. *Physica A* 378: 336-344.

• Capurro A, Malta CP, Diambra L, Contreras P and Migliaro ER (2005) Cross-correlation of heartbeat and respiration rhythms. *Physica A* 356: 37-42.

• Capurro A, Diambra L and Malta CP (2005) Model for the respiratory modulation of the heart beat-to-beat time interval series. *Physica A* 355: 439-460.

• Capurro A and Pakdaman K (2004) The electric fish *Brachyhypopomus pinnicaudatus* produces jamming avoidance responses to signals that are harmonically related to its own discharges. *J. Exp. Biol.* 207: 2907-2916.

• Capurro A and Malta CP (2004) Noise autocorrelation and jamming avoidance performance in pulse type electric fish. *Bulletin of Mathematical Biology* 66 (4): 885-905.

• Capurro A, Diambra L and Malta CP (2003) Model for the heart beat-to-beat time series during meditation. *Physica A* 327: 168-173.

• Diambra L, Malta CP, Capurro A and Fernandez J (2001) Nonlinear structures in EEG signals. *Physica A* 300: 505-520.

• Capurro A, Longtin A, Bargarinao E, Sato S, Macadar O and Pakdaman K (2001) Variability of the electric organ discharge interval in *Gymnotus carapo*. *Biol. Cybern.* 84: 309-321.

• Capurro A, Pakdaman K, Perrone R and Macadar O (1999) Analysis of the jamming avoidance response in the electric fish *Gymnotus carapo*. *Biol. Cybern.* 80: 269-283.

• Capurro A, Diambra L, Lorenzo D, Macadar O, Martin M, Mostaccio C, Plastino A, Perez J, Rozman E, Torres M, and Velluti J (1999) Human brain dynamics: the analysis of EEG signals with Tsallis information measure. *Physica A* 265: 235-254.

• Capurro A, Pakdaman K, Nomura T and Sato S (1998) Aperiodic stochastic resonance with correlated noise. *Physical Review E* 58: 4820-4827).

• Capurro A, Macadar O, Perrone R and Pakdaman K (1998) Computational model of the jamming avoidance response in the electric fish *Gymnotus carapo*. *Biosystems* 48: 21-27.

• Diambra L, Capurro A and Plastino A (1998) Neural networks that learn how to detect epileptic spikes. *Physics Letters A* 241: 61-66.

• Capurro A, Diambra L, Lorenzo D, Macadar O, Martin M, Mostaccio C, Plastino A, Rozman E, Torres M and Velluti J (1998) Tsallis entropy and cortical dynamics: the analysis of EEG signals. *Physica A* 257: 149-155.

• Capurro A, Diambra L, Lorenzo D, Macadar O, Martin M, Plastino A, Rozman E, Torres M and Velluti J (1997) Tsallis information measure, multirresolution analysis and nonlinear dynamics. *INRIA research reports* 3184.

• Capurro A, Reyes-Parada M, Olazabal D, Perrone R, Silveira R and Macadar O (1997) Aggressive behavior and jamming avoidance response in the weakly

electric fish *Gymnotus carapo*. Effects of 3,4 Methylenedioxymethamphetamine (MDMA). *Comp. Biochem. Physiol. A* 118A: 831-840.

• Capurro A, Reyes-Parada M, Ardanaz J, Silveira R and Macadar O (1994) Serotonergic control of electric organ discharge in *Gymnotus carapo*. Role of 5-HT2A/2c receptor subtypes. *Comp. Biochem. Physiol A* 109A: 583-591.

Forthcoming publications

• Capurro A, Cordeiro JC, Cordeiro KK, Meier R, Schulze-Bonhage A and Aertsen A (2012) High-frequency components and correlation dynamics in local field potentials during hippocampal kindling in rats. To be submitted to *Epilepsia*.

•Biosynthetic infochemical communication: A ratiometric approach (2012) SB Olsson, WP Bula, A Capurro, G Carot-Sans, N Dimov, MD Jordan, S Karout, LS Kuebler, D Markovic, L Muñoz, S Pathak, Z Rácz, J Challiss, M Cole M, JW Gardner, JGE Gardeniers, A Guerrero, BS Hansson, TC Pearce. Obtained positive pre submission enquiry in *Science*.

Presentations in scientific meetings

• Karout S, Rácz Z, Capurro A, Cole M, Gardner JW, Pearce TC (2011) Ratiometric chemical blend processing with a neuromophic model of the insect macroglomerular complex. AIP Conference Proceedings "ISOEN: 14th International Symposium on Olfaction and Electronic Nose" (Rockefeller University, May 2011).

• Capurro A, Baroni F, Olsson S, Kuebler L, Hansson BS and Pearce TC (2010) Interactions between odorants in single neurons of the antennal lobe. Poster at "International Workshop on Dynamical Olfaction" (Brighton, UK, June 30th to July 2th, 2010).

• Karout S, Pathak S, Rácz Z, Gopalakrishnan LA, Capurro A, Cole M and Pearce TC(2010) Spiking Programmable Logic Implementation of the Insect Macroglomerular Complex for Chemical Blend Processing. Poster at "International Workshop on Dynamical Olfaction" (Brighton, UK, June 30th to July 2th, 2010).

• Chong KY, Capurro A, Karout S and Pearce TC (2010) Stimulus and Network Dynamics Can Collide in a Ratiometric Model of the Antennal Lobe Macroglomerular Complex. Poster at "International Workshop on Dynamical Olfaction" (Brighton, UK, June30th to July 2th, 2010).

• Cordeiro JG, Capurro A, Cordeiro KK, Aertsen A and Schulze-Bonhage A (2008). Evaluation of low frequency stimulation in fully kindled rats. *Biomedizinische Technik* 53: 132-134. Ergänzungsband (Berlin).

• Cordeiro JG, Capurro A , Cordeiro KK, Stieglitz T, Schulze-Bonhage A and Rickert J (2008). Evaluation of low frequency stimulation in fully kindled rats. IFESS 2008 from movement to mind- 13th Annual International FES Society Conference (Freiburg, 2008).

• Evolution of correlations and high frequency components in EEG recordings from rat kindling and kainate models of temporal lobe epilepsy. Capurro A, Aertsen A, Cordeiro J, Meier R, Haeffner M and Schulze-Bonhage A (2007) Poster at ”3rd International Workshop on Seizure Prediction in Epilepsy” (Freiburg, September 29-October 2nd, 2007), p 47.

• Multi-channel correlations and high frequency components in EEG recordings from rat kindling and kainate models of temporal lobe epilepsy. Capurro A, Aertsen A, Cordeiro J, Meier R, Haeffner M and Schulze-Bonhage A (2007) Poster at ”3rd Bernstein Symposium” (Gottingen, September 24-27, 2007), p. 49.

• High frequency components in local field potentials during hippocampal kindling in rats. Alberto Capurro, Ad Aertsen, Joacir Cordeiro, Monika Haeffner and Andreas Schulze-Bonhage. Poster presentation at “Neurex/BCCN Meeting 2007” (Freiburg, June 22-23, 2007).

• Evolution of high frequency components in depth EEG recordings during early stages of hippocampal kindling in rats. Alberto Capurro, Ad Aertsen and Andreas Schulze-Bonhage. Poster presentation at “Fifth Joint Meeting of the German, Austrian and Swiss Sections of the International League Against Epilepsy”, Basle, May 16-19, 2007. *Epilepsia* 48 (Suppl. 3) 1-66 (2007).

• Diambra L, Capurro A and Malta CP. Constructing the average natural history of HIV-1 infection. Proceeding of XV Conference of Nonequilibrium Statistical Mechanics and Nonlinear Physics. Mar del Plata (Argentina, 4-8 December, 2006). *AIP Conf. Proc* 913: 157-162 (2007).

• Crosscorrelation of heartbeat and respiration rhythms in diabetic patients. Capurro A, Malta CP, Diambra L, Contreras P and Migliaro ER. Poster presentation at “XXVIII Brazilian Congress of Applied and Computational Mathematics” (São Paulo, Brazil, September 2005).

• Crosscorrelation of heartbeat and respiration rhythms in diabetic patients. Seminar at the Bernstein Center for Computational Neuroscience (Albert-Ludwigs-University Freiburg), Germany, August 2005.

• Crosscorrelation of heartbeat and respiration rhythms. Capurro A, Malta CP, Diambra L, Contreras P and Migliaro. Oral presentation at "Medyfinol2004", La Serena, Chile, December 2004.

• Insights from a biophysical model about the effects of metronomized breathing. Capurro A, Malta CP, Contreras P and Migliaro E. "XXVII Brazilian Congress of Applied and Computational Mathematics" (Porto Alegre, Brazil, September 2004).

• Heart rate variability in diabetic patients. Capurro A, Malta CP, Diambra L, Contreras P, Canetti R and Migliaro E. Poster presentation at the "XXVI Brazilian Congress of Applied and Computational Mathematics" (Rio Preto, Brazil, September 2003).

• Computational model for heart beat time interval series. Capurro A, Diambra L, and Malta CP. "XIII Meeting on Nonequilibrium Statistical Mechanics and Nonlinear Physics" (Colonia, Uruguay, December, 2002).

• Seasonal and sex differences in locomotor and electric displays in *Brachyhypopomus pinnicaudatus*. Quintana L, Perrone R, Capurro A, Sierra F, Blanco F, Silva A and Macadar O. *Soc. Neurosci. Abstr.* 781.16 (2002).

• Jamming avoidance strategies in South American pulse type electric fish. Conference for the Physics Institute, São Paulo University, Brazil (October 2002).

• Modeling of the time series associated to heart beats: Comparison of two meditation techniques. Capurro A, Diambra L and Malta CP. "XXV Brazilian Congress of Applied and Computational Mathematics" (Nova Friburgo, Brazil, 2002).

• Jamming avoidance strategies in South American pulse type electric fish. Capurro A. "XXV Brazilian Congress of Applied and Computational Mathematics" (Nova Friburgo, Brazil, 2002).

• Jamming avoidance responses in electric fish. Seminar for the Department of Mathematical Physics, University of São Paulo, Brazil (May 2002).

• Courtship behavior in *Brachyhypopomus pinnicaudatus*. Macadar O, Perrone R, Capurro A, Silva A. *Soc. Neurosci. Abstr.* 957.8. (2001).

• Electric behavior during breeding in a population of *Brachyhypopomus pinnicaudatus* from the temperate climate. Silva A, Quintana L, Perrone R, Capurro A, Errandonea P and Macadar O. *Soc. Neurosci. Abstr.* (2000).

• Characterization of courtship behavior in *Brachyhypopomus pinnicaudatus*. Perrone R, Errandonea P, Capurro A and Silva A. Poster presentation at the IX journeys of the Uruguayan Society of Bioscience (Solis, Uruguay, 2000).

• The correlation of electric organ discharge variability optimizes the jamming avoidance response in *Gymnotus carapo*. Capurro A. Oral presentation in the round table "Time series in physiology" at the IX journeys of the Uruguayan Society of Bioscience (Solis, Uruguay, 2000).

• The intervals between electric organ discharges as a low-distortion "window" to observe the behavior of the pacemaker. Capurro A, Reyes P, Lorenzo D and Macadar O. Neural Coding 99 (Osaka, Japan, 1999).

• Jamming avoidance response in *Gymnotus carapo*. Capurro A, Pakdaman K, Perrone R and Macadar O. "Third IBRO regional meeting", SAN-SABRO (Puerto Iguazu, Argentina, 1998).

• Analysis of the jamming avoidance response in the electric fish *Gymnotus carapo*. Capurro A, Pakdaman K, Perrone R and Macadar O. Neuroethology Conference-Satellite Symposium (California, San Diego, 1998).

• Novelty response, off response and jamming avoidance response in weakly electric fish. Modulation by serotonergic drugs. Capurro A, Reyes-Parada M, Perrone R, Olazalal D, Silveira R and Macadar O. 12th Symposium of Biological and Physiological Engineering, Tamagawa University (Tokyo, 1997).

• Rate modulations of the electric organ discharge reflect behaviors in electric fish *Gymnotus carapo*. Capurro A, Reyes-Parada M, Perrone R, Ardanaz JL, Silveira R and Macadar O. Neuronal Coding 97 (Versailles, France, 1997).

• Exitability recovery in CA1 pyramidal cells of rat hippocampus. Effects of carbacol. Capurro A and Buño W. VII Workshop of the Uruguayan Society of Biological Sciences (Piriápolis, Uruguay, 1995).

• Serotonergic control of the electric organ discharge in *Gymnotus carapo*. Role 5-HT2A/2c receptor subtypes. Capurro A, Reyes-Parada M, Ardanaz JL, Silveira R and Macadar O. Free communication at the XVIII Latin American Congress of Physiological Sciences (Montevideo, 1994).

• Novelty response in *Gymnotus carapo*. Capurro A, Ardanaz JL and Macadar O. Free communication at the XVIII Latin American Congress of Physiological Sciences (Montevideo, 1994).

Participation in evaluating committees

Referee for articles in *Biological Cybernetics* (1999), *Computational Intelligence and Neuroscience* (2009) and *Frontiers in Human Neuroscience* (2009), as well as for a research project of the National Science Foundation (USA) in 2004.

Present position

• Research Affiliate at the Engineering Department of Leicester University (UK).

• Researcher of first level at PEDECIBA (Program for Development of Basic Science), "Universidad de la República" (Uruguay).

• Associate Researcher (level 1) at the "National System of Researchers" (ANII, Uruguay).

I obtained my first degree is as a medical doctor at the Faculty of Medicine of UdelaR (Uruguay) where I studied from 1983 to 1991. The last year of this medical training was a residence period at the neurology service of a public hospital in Montevideo. When I was about to finish this medical residence I was accepted for a MSc in Neuroscience at the UN sponsored PEDECIBA ("Plan for Development of Basic Science", UdelaR, Uruguay). I completed this MSc with a thesis about the novelty response in South American electric fish (1992-1994), and after that I did a 9 month stay in Spain to learn intracellular recordings in rat hippocampus at the Cajal Institute (Madrid). In 1996 I started my PhD in neuroscience (1996-1999) at PEDECIBA working at the Neurophysiology Department of the Institute of Biology "Clemente Estable" (which belongs to the Ministry of Education of Uruguay), where I obtained a permanent position as Assistant Researcher. I worked in neurophysiology and behaviour of electric fish, including a long stay at the Department of Biophysical Engineering of Osaka University (with a JSPS fellowship and research grant of the Ministry of Education of Japan) where I learned about the effects of noise in models of sensory neurons and pacemakers, and modelled the jamming avoidance response of the South American electric fish. During my period at the Institute of Biology, I also learned about applications of non-linear dynamics to the processing of EEG recordings of epileptic patients, including a stay at the Department of Physics of La Plata University (Argentina, 1995). I presented my PhD thesis about the jamming avoidance response of South American electric fish in December of 1999.

In my postdoctoral period I have added a wide range of expertise in recording, processing and modelling physiological signals. I first attended the "EU Advanced Course in Computational Neuroscience" (Trieste, 2001) where I learned to construct a conductance based model of pacemaker neurons. My first working experience after the PhD was to study the respiratory modulation of heart rate variability in diabetic patients and healthy subjects during mediation practices at Department of Mathematical Physics of Sao Paulo University (Brazil, 2002-2005). This research included data analysis and modelling of heart beat interval series from diabetic patients with simultaneous respiratory recordings using a conductance based computational model of the SA node pacemaker. After that, I worked with animal models of epilepsy (hippocampal kindling) using deep brain stimulation at the University Clinic and BCCN of Freiburg University (Germany, 2006-2007). I performed brain surgery, as well as recording and analysis of multi-channel local field potentials and behavioural display during epileptic seizures. I latter gained experience in multichannel single neuron recordings and spike sorting in patients with temporal lobe epilepsy using visual stimulation (2008-2009) at the Department of Engineering of the University of Leicester and King's College Hospital (London) where I was clinical practitioner. From 2010, I am continuing my training in computational neuroscience within the Bioengineering research group of the

University of Leicester studying neural codes in the olfactory system of the moth. We process intracellular recordings of antennal lobe neurons using discrete wavelet transform to study the encoding of odour blends, and develop computational models to be applied in the construction of electronic circuits. I actively collaborate in the supervision of undergraduate and postgraduate students, as well as in the preparation of grant proposals and reports.

I have very good communication skills, both writing and face to face. My native language is Spanish, my level in English is very good, and I am also fluent in Portuguese. I have published more than 20 articles in peer reviewed international journals (see attached CV) that constitute a clear testimony of my ability to learn new techniques and push ahead high quality research with intellectual independence and strong motivation.

My experience in university teaching started when I was Assistant Researcher at the Neurophysiology Department of the Institute of Biology in Uruguay, because this department was associated with the Faculty of Science of the UdelaR. In this context, I was co-director of a successful MSc thesis in Biology oriented to Neuroscience (PEDECIBA, Faculty of Science, UdelaR, 2000-2004), and worked as assistant in the practical classes of the "International School of Neuroscience" (organized by IBRO) in the editions held at Montevideo in 1996, 2000, 2001 and 2002 (the Neurophysiology Department was one of the hosts laboratories of the IBRO summer school). I was also assistant in the practical classes of the undergraduate course "Physiology" (2000 and 2001) and the postgraduate course "Neuroethology" (1999), and organized the postgraduate course "Time Series" (1999) at the Faculty of Science (UdelaR). In previous years, I had been also assisting the teaching in the undergraduate course "Introduction to Biology" (1994-1995, Faculty of Science, UdelaR). More recently, I have been collaborating with the supervision of undergraduate and postgraduate students in Neuroscience and Bioengineering at the University of Leicester (see attached CV), as part of my duties as Research Associate.

I think that my combined experience in computational, clinical and experimental aspects of neuroscience makes me suitable for this position at the Brown University Department of Neuroscience. I can understand neurologic and psychiatric disorders due to my medical degree. I have experience in multi-electrode recordings and EEG, as well as in data analysis and modelling using Matlab. I have been involved in university teaching in many countries and can communicate fluently with students of different levels and cultures. My background is ideal to establish multidisciplinary collaborations with engineers, clinicians, mathematicians, computer scientists, and neuroscientists.