Curriculum Vitae

Personal information

Name	**ANDREI CATALIN CIUPARU**
Nationality	Romanian
Date of birth	10.11.1993
Gender	M
Address	Ploiesti, 21 Nicolae Iorga St., BL. C2, 2 appartment, Prahova County ROMANIA
Phone number/email/Skype address	+40729818744 // andrei.ciuparu@gmail.com // SKYPE ID: ciupyy93

Work experience

Dates	April 2018 – Present
Name and address of employer	**Transylvanian Institute of Neuroscience** Str. Ploiești 33, 400157 Cluj-Napoca, Romania
Type of Business or Sector	The main mission of TINS is to further neuroscientific research by studying the dynamics of neural circuits in health and disease. TINS also focuses on research in cognitive sciences and brain-inspired artificial intelligence.
Occupation or position held	Research Assistant
Main Activities and responsibilities	-Collection, pre-processing and statistical analysis of data -Experimental design and execution -Main areas of research: lie detection using EEG and Eye tracking data, design, implementation and testing on machine learning algorithms for the classification and clustering of EEG, EcOG, Calcium dynamics and implanted electrode data

Dates	January 2018 – April 2018
Name and address of employer	**Romanian Institute for Science and Technology – DeepRiemann Project** Str. Cireşilor nr. 29, 400487 Cluj-Napoca, România Str. Virgil Fulicea nr. 17, 400022 Cluj-Napoca, România
Type of Business or Sector	Research institute that performs design and analysis of novel training algorithms for Neural Networks in Deep Learning, by applying notions of Riemannian optimization and differential geometry. The task of the training a Neural Network is studied by employing tools from Optimization over Manifolds and Information Geometry, by casting the learning process to an optimization problem defined over a statistical manifold, i.e., a set of probability distributions.
Occupation or position held	Research Assistant
Main Activities and responsibilities	-Design and implementation of machine learning network based on the Fisher information matrix for the classification of digits in the MNIST database. -Testing and evaluation of learning curve of previously mentioned algorithm. -Design and testing of algorithm to replicate results of a Variational Autoencoder. -Implementation of algorithms beginning form diverse methods of Reinforcement learning. -Creation of Shapes database for the testing of machine learning algorithms

Dates	September 2016 - September 2017
Name and address of employer	**Donders Institute for Brain, Cognition and Behaviour** Kapittelweg 29,6525 EN Nijmegen,The Netherlands
Type of Business or Sector	Research institute that performs cutting edge research into cognitive neuroscience in diverse fields from memory and language to action and perception.
Occupation or position held	Research Intern
Main Activities and responsibilities	- Participation and contribution to the collection of data, analysis of data as part of a research project about memory replay and its effects on memory, that also led to my masters thesis -Operation of MEG (magneto-encephalogram) and EEG -Application of data pre-processing steps and creating a pre-processing pipeline (including source localization techniques) -Application of statistical methods for extraction of relevant data -All processing and pre-processing steps were applied in Matlab. -Participated in 2 lab rotations involving analysis of MRI and MEG data, as well as testing a lab protocol involving TMS
Dates	September 2013 – September 2015
Name and address of employer	**ROMANIAN INSTITUTE FOR SCIENCE AND TECHNOLOGY - CENTER FOR COGNITIVE AND NEURAL STUDIES (CONEURAL)** Cireşilor Street, 29, 400487 Cluj-Napoca, Romania
Type of business or sector	Research institute that performs research on complex systems, computational, theoretical and experimental neuroscience, biologically-inspired robotics, artificial intelligence and dynamical systems.
Occupation or position held	Research Intern
Main activities and responsibilities	-Principal researcher in study on statistical bias arising from application of different normalization tehniques applied to fourier transforms of signals -Signal generation (white noise, gausian noise) and subsequent statistical analysis applied in Matlab -Interpretation of results and preparation of figures for article in Corel Draw

Published works

Ciuparu, A., & Mureşan, R. C. (2016). Sources of bias in single-trial normalization procedures. European Journal of Neuroscience, 43(7)

Ciuparu, A., van der Geugten, D., & Rheinheimer, N. (2017). Low frequency effects of targeted memory reactivations on subsequent recall processes. Low Frequency Effects of Targeted Memory Reactivations on Subsequent Recall Processes, 1.

Ciuparu, A., Nagy-Dăbâcan, A., & Mureşan, R. C. (2020). Soft++, a multi-parametric non-saturating non-linearity that improves convergence in deep neural architectures. Neurocomputing, 384, 376-388.

Gheorghiu, M., **Ciuparu, A.,** Mimica, B., Whitlock, J. R., & Mureşan, R. C. (2020, May). A Machine Learning Approach to Investigate Fronto-Parietal Neural Ensemble Dynamics During Complex Behavior. In 2020 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR) (pp. 1-6). IEEE.

Grosu, G. F., Hopp, A. V., Moca, V. V., Bârzan, H., **Ciuparu, A.**, Ercsey-Ravasz, M., ... & Mureșan, R. C. (2022). The fractal brain: scale-invariance in structure and dynamics. Cerebral Cortex.

Ciuparu, A., & Mureşan, R. C. (2021, October). Jittered sampling-a potential solution for detecting high frequencies in GCaMP recordings. In 2021 IEEE 17th International Conference on Intelligent Computer Communication and Processing (ICCP) (pp. 469-475). IEEE.

Ciuparu, A., & Muresan, R. C. (2022). Gradient-k: Improving the performance of K-Means using the density gradient. bioRxiv.

Education

Dates	August 2015 – August 2017
Name and type of organisation providing education	**RADBOUD UNIVERSITY, NIJMEGEN** **Donders Institute for Brain, Cognition and Behaviour** Kapittelweg 29,6525 EN Nijmegen,The Netherlands
Title of qualification awarded (to be awarded)	**MSc Cognitive Neuroscience (Research)** Subject of internship: The role of Memory Reactivations during Wake and Sleep

Principal subjects /Occupational skills covered	Molecular and Cellular Neurobiology, Neurophilosophy, Neurogenetics, Neuroimaging, Advanced Electrophysiological Neuroimaging Techniques, Psychology of Learning, Trends in Cognitive Neuroscience, Advanced Mathematics (Practical Matlab Applications), Neuropharmacology and Animal Models, Cognitive Neuroscience of Memory, Basic Mathematics, Practical ERP Training, Neuroanatomy
Dates	October 2012 – July 2015
Name and type of organisation providing education	**BABES BOLYAI UNIVERSITY, CLUJ – NAPOCA** **School of Psychology and Educational Science** Sindicatelor 7th Street, Cluj-Napoca, 400029 Cluj-Napoca , Cluj County, Romania
Title of qualification awarded	**Psychology License** Subject of thesis: Dumneavoastra sau tu? Cine ne motiveaza mai mult? Un studiu care sa verifice efectul mediat al limbajului formalizat asupra motivatiei elevilor Grade: 9 (written exam:8; thesis:10)
Principal subjects / occupational skills covered	Introduction to Psychology, Introduction to Neuroscience, Experimental Psychology and Data Analysis, Genetics of Human Behavior, Cognitive Psychology, History of Psychology, Developmental Psychology, Group Dynamics, Social Cognition, Elements of Psychometrics, Elements of human Personality, Measuring of aptitudes and Intelligence, Work Psychology, Organizational Psychology, Clinical Psychology and Psychotherapy, Educational Psychology, Cognitive-behavioral Modifications, Educational counseling and career orientation.
Dates	September 2008 – June 2012
Name and type of organisation providing education	**ION LUCA CARAGIALE NATIONAL COLLEGE, PLOIESTI**
Title of qualification awarded	**High School Diploma/Bacalaureate with a general grade of 9.53**
Principal subjects / occupational skills covered	Profile: Mathematics-Programming Mathematics (final grade-9.10/10; four years of High School experience including matrix algebra, differential equations, integral equations, limits of series, complex numbers, trigonometry), Physics (final grade-9.85/10; four years of high school experience including direct and alternative current, thermodynamics, optics, beginning quantum mechanics), Chemistry, Biology, Programming

Certifications and awards	
Dates	March 27, 2015
Name and type of organisation providing education	**TOEFL Internet Based Test**
Title of certification awarded	TOEFL iBT Score: 115/120
Dates	June 2011
Name and type of organisation providing education	**University of Cambridge ESOL Examinations**
Title of certification awarded	Certificate in Advance English – Grade A (performance at Grade A demonstrates an ability at level 3 and Council of Europe Level C2)
Personal skills and competences	
Mother tongue(s)	Romanian
Other language(s)	English – fluent ***I have attended classes in English for 6 years during primary and secondary school, New Haven ,Connecticut ,USA**
Computer skills and competences	• Good command of Matlab • Good command of Corel Draw • Good command of Python • Good command of Tensorflow and Torch