Ana-Maria Ichim

Curriculum Vitae

Education

2022-present	**Postdoc in Applied Electronics** , Transylvanian Institute of Neuroscience, Cluj-Napoca, Romania
2018-2022	**Doctoral degree in Electronics, Telecommunications and Information Technology**, Technical University of Cluj-Napoca, Cluj-Napoca, Romania
2015–2018	**Master Degree in Applied Cognitive Neuroscience**, *Faculty of Medicine and Surgery, University of Milan*, Italy, Summa Cum Laude

Coursework includes: Functional Cognitive and Restorative Neurosciences in Normal and Dysfunctional Brain, Receptors and Synaptic Signalling, Neuropsychology and Neuromodulation, Neuroscience and Psychiatry, Anatomo-Physiological Basis of Cognitive processes, Artificial Intelligence and Data Analysis, Logic and Rhetoric, Decision-Making, Cognitive Research Methodology, Cognitive Psychology, Philosophy of Science, Applied Cognitive Psychology

2011–2015	**Bachelor Degree in Economic Sciences**, *University of Brescia*, Italy

Coursework includes: Statistics, Linear Algebra and Calculus, Information Technology, Financial and Actuarial Mathematics, Microeconomics, Macroeconomics, Empirical Economics

2005–2010	**Baccalaureate**, *Istituto Bonomi-Mazzolari*, Italy

Tecnico-Commerciale Turistico

Additional Education

2017-2019, present	**Transylvanian Experimental Neuroscience Summer School - audient**, TENSS, Pike Lake, Transylvania, Romania

- Optical techniques for microscopy applied to experimental neuroscience such as wide-field fluorescence microscopy and two-photon microscope
- Optogenetics
- Biophysics of neurons
- Patch clamp recordings
- Signal processing and data analysis
- Theoretical and computational modeling in neural circuits

2019-present	**Transylvanian Experimental Neuroscience Summer School - Teaching Assistant**, TENSS, Pike Lake, Transylvania, Romania

- Electrophysiology
- Signal processing and data analysis
- Patch clamp recordings
- Animal behaviour analysis

Professional Experience

2017-present	**Researcher**, Transylvanian Institute of Neuroscience - Experimental and Theoretical Neuroscience Lab, Cluj-Napoca, Romania

- ○ **Animal care:** FELASA LAS Accreditation A, B, C, D
- ○ **Stereotaxic surgery in the laboratory mouse:** survival surgery standards, intracranial drilling, intracranial injections, brain cannulation (including ICVC and Bi-Lateral), CSF (cerebral spinal fluid) collection

2014–2015	**F2F operator**, *Doctors without borders*, Milan, Awarness and Fundraising

Extracurricular activities

2015–2017	**Volunteer**, *Red Cross*, Castiglione delle Stiviere
2012–2017	**Volunteer**, *Doctor without borders*, Brescia, Awarness and Foundraising

Digital skills

- ○ Programming languages: Matlab (experienced 4 years), Gretl (experienced 2 years), LaTeX (experienced 4 years), Python (experienced 2 years)
- ○ Proficiency with Microsoft Office, OS X
- ○ Astrophotography

Funding and Academic awards

2019	Entrepreneurial competences and excellence research in doctoral and postdoctoral studies programs (ANTREDOC) in collaboration with BOSCH (Romania)
2019	Winner of the Student Symposium in Electronics and Telecommunication Engineering (SSET) XV edition
2017–2018	Excellence fellowship - University of Milan
2017–2018	Master Thesis fellowship - University of Milan

Afiliations

- ○ Transylvanian Institute of Neuroscience
- ○ Technical University of Cluj-Napoca

Publications

- ○ Ichim A.-M., Nagy-Dabacan A., Muresan R.C. (2019), A method for the measurement and interpretation of neuronal interactions: improved fitting of cross-correlation histograms using 1D-Gabor Functions. Intelligent Computer Communication and Processing (ICCP), 2019 15th IEEE International Conference on, paper 061, In-press.
- ○ Ichim A.-M., Rusu C., Mureșan R. C. (2019), Spike cross-correlations - a method for the quantification of temporal coordination in neural circuits. Novice Insights, in press.
- ○ Bârzan, H.*,Ichim, A.-M.*, Muresan R.C. (2020), Machine Learning-Assisted Detection of Action Potentials in Extracellular Multi-Unit Recordings. International Conference on Automation, Quality and Testing, Robotics(AQTR), 2020 21th IEEE International Conference on, paper 044, In-press.
- ○ Barzan H., Moca V.V., Ichim A.-M., Muresan R.C. (2020), Fractional Superlets. 28th European Signal Processing Conference (EUSIPCO), Amsterdam, 18-22 January, 2021. In-press.

- Barzan H., <u>Ichim A.-M.</u>, Moca V.V., Muresan R.C. (2022), Time-frequency representations of brain oscillations: Which one is better? Frontiers in Neuroinformatics. In-press.
- <u>Ichim, A.-M.</u>, Bârzan, H., Moca, V.V., Vervaecke, K., Mureșan, R.C. (2022) Blue flicker stimulation enhances gamma rhythms in mouse visual cortex.*31st Annual Computational Neuroscience Meeting*, *CNS*2022*, P77.
- Ardelean, R.E., Coporîie, A.,<u>Ichim, A.-M.</u>, Dinsoreanu, M., Mureșan, R.C. (2022) A Study of Autoencoders as a Feature Extraction Technique for Spike Sorting. *PLOS ONE*.
- Ardelean, R.E., <u>Ichim, A.-M.</u>, Dinsoreanu, M., Mureșan, R.C. (2022) Improved Space Breakdown Method - A robust clustering technique for spike sorting. *Frontiers in Computational Neuroscience.*

Language skills

Italian	native
Romanian	native
English	proficient
French	intermediate
Spanish	basic