



Curriculum Vitæ
HOREA-IOAN IOANĂȘ

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KEYWORDS: Multimodal Neuroimaging · Optogenetics · Psychopharmacology · Electrical Engineering · Free and Open Source Software · Python · Statistics · Machine Learning · Reproducibility · Technology Transfer · Neuroenhancement

METRICS: 115 RG Total Research Interest · 13 RG Score · 7 h-index

EDUCATION

Swiss Federal Institute of Technology Jan. 2015 – Jul. 2019
DrSc. in Neuroscience & Biomedical Engineering Zurich, CH

Thesis: “Imaging Monoaminergic Systems and their Pharmacological Control”

Heidelberg University, Ruperto Carola Sep. 2011 – Jan. 2014
MSc. in Molecular Biosciences & Neuroscience Heidelberg, DE

Thesis: “Neuronal Correlates of Occulometric Parameters in Face Recognition”

GPA: 1.2 — German

Saint Petersburg State University Sep. 2010 – Jan. 2011
Exchange Student Saint Petersburg, RU

Focus: Practical experience in Neuroimaging and Electrophysiology

Heidelberg University, Ruperto Carola Sep. 2008 – Sep. 2011
BSc. in Molecular & Cellular Biology Heidelberg, DE

Thesis: “Intrinsic Optical Imaging of Biogenous Magnetoception”

GPA: 1.5 — German

Goethe High School Sep. 1996 – Jun. 2008
School Diploma Bucharest, RO

Focus: Natural Sciences, Social Sciences, German Language

GPA: 1.1 — German (9.95 — Romanian)

WORK EXPERIENCE

Massachusetts Institute of Technology - Biological Engineering Mar. 2020 – present
Postdoctoral Researcher Cambridge, MA/USA

Advisors: Prof. Dr. Alan Jasanoff

Work: Animal fMRI · Protein Biosynthesis · Optogenetics · Psychopharmacology · Electrical engineering · Machine learning · Data analysis (AFNI, FSL, nipy) · Software development (Python, Bash, MATLAB)

Swiss Federal Institute of Technology - Biomedical Engineering Jan. 2015 – Feb. 2020
Post/Doctoral Researcher Zurich, CH

Advisors: Prof. Dr. Markus Rudin, Prof. Dr. Marks von Kienlin, Prof. Dr. Klaas Enno Stephan

Work: Animal fMRI · Optogenetics · Psychopharmacology · Sequencing · Histology · Electrical engineering · Hardware design · Machine learning · Data analysis (AFNI, FSL, nipy) · Software development (Python, Bash)

Central Institute of Mental Health - Clinical Psychology Jun. 2013 – Jan. 2014
Junior Researcher Mannheim, DE

Advisors: Prof. Dr. Peter Kirsch, Prof. Dr. Daniel Durstewitz, Prof. Dr. Rainer Spanagel

Work: Human fMRI · Pupillometry · Emotional face recognition · Eye tracking · Psychometrics · Image processing · Data analysis (SciPy, SPM, R) · Software development (Python, MATLAB)

- University of Oxford - Experimental Psychology** Oct. 2012 – Apr. 2013
Department Staff Oxford, UK
 Advisors: Prof. Dr. Glyn Humphreys
 Work: Behavioural testing · Experimental design · Photography · Computer vision · Eye tracking · Data analysis (scikits, SciPy) · Software development (Python)
- MPI for Medical Research - Molecular Neurobiology** Feb. 2012 – Jul. 2012
Intern, Student Assistant Heidelberg, DE
 Advisors: Dr. Valery Grinevich, Prof. Dr. Peter Seeburg
 Work: Molecular cloning · Viral vector production, purification, and delivery · Immunohistology
- Carl von Ossietzky University of Oldenburg** Jun. 2011 – Dec. 2012
Visiting Researcher Oldenburg, DE
 Advisors: Dr. Dominik Heyers, Prof. Dr. Henrik Mouritsen, Dr. Nils-Lasse Schneider
 Work: Pigeon visual vulst Intrinsic Optic Imaging · Hardware design · Magnetic field stimulation · Data analysis (SciPy)
- MPI for Medical Research - Biomedical Optics** Mar. 2011 – Apr. 2012
Guest Scientist Heidelberg, DE
 Advisors: Dr. Andreas Schäfer, PD. Thomas Hahn, Dr. Damian Wallace
 Work: Mouse barrel cortex Intrinsic Optic Imaging · Experimental design · Hardware design · Data analysis (MATLAB)
- Sechenov Institute of the Russian Academy of Science** Nov. 2010 – Jan. 2011
Student Assistant Saint Petersburg, RU
 Advisor: Prof. Dr. Konstantin Bolshakov
 Work: Isolation and cultivation of brain slices · Patch clamp · Pharmacology

MENTORING

- [BSc Project] Massachusetts Institute of Technology** Mar. 2021 – present
Increasing Throughput in neurotransmitter-sensitive opto-pharmacofMRI Cambridge, MA/USA
 Topics: Protein biosynthesis · Stereotaxic surgery design · Biomedical engineering · MRI · Workflow automation
 Students (grades): Tetiana Husak (TBD — US)
- [BSc Project] Massachusetts Institute of Technology** May. 2020 – Jan. 2021
Quality Assurance and Template Standardization for preclinical MRI Cambridge, MA/USA
 Topics: Image processing · Software Engineering · Biomedical engineering · MRI
 Students (grades): Caroline Bao, Vivian Vu, Brianna Yao (pass, pass, pass — US)
- [MSc Project] Swiss Federal Institute of Technology** Aug. 2019 – Feb. 2020
Machine Learning Enabled Brain Extraction Zurich, CH
 Topics: Machine learning · Image processing · Biomedical engineering · MRI
 Student (grade): Hendrik Klug (5.75 — Swiss)
- [MSc Thesis] Swiss Federal Institute of Technology** Aug. 2018 – Feb. 2019
High Throughput Pattern Matching of fMRI Maps and Molecular Features Zurich, CH
 Topics: Image processing · Data structures · Information theory · Databases · Gene expression
 Student (grade): Tina Segessemann (5.5 — Swiss)
- [MSc Project] Swiss Federal Institute of Technology** Sep. 2017 – Jan. 2018
Advanced Scientific Software Management with Gentoo Linux Zurich, CH
 Topics: Software management · Continuous integration · Build systems · Containers
 Student (grade): Dominik Schmidt (5.7 — Swiss)

[MSc Thesis] Swiss Federal Institute of Technology Mar. 2017 – Sep. 2017
Experimental Design Optimization and Stimulus Train Automation for fMRI Zurich, CH
Topics: General Linear Model · Genetic algorithms · Electrical engineering · Python · Standards
Student (grade): Florian Aymanns (6.0 — Swiss)

[Internship] Psychiatric University Clinic Zurich Feb. 2015 – Jul. 2015
Electrophysiological and Optogenetic Targeting of the Hippocampus Zurich, CH
Topics: Histology · Fluorescent microscopy · Data analysis
Student (grade): Ridouane Achargui (4.5 — Swiss)

TEACHING

Swiss Federal Institute of Technology Nov. 2018 – Jan. 2020
Experimental Neuroimaging Zurich, CH
Topics: fMRI · Data structures · Data processing · Modelling

Swiss Federal Institute of Technology Oct. 2017 – Jan. 2020
Biomedical Imaging Tutorial Zurich, CH
Topics: Nuclear imaging · Positron Emission Tomography · Data analysis · Python · MATLAB

Swiss Federal Institute of Technology, University of Zurich Sep. 2016 – Jan. 2020
EXCITE Summer School on Biomedical Engineering Zürich, CH
Topics: fMRI · Data analysis

Swiss Federal Institute of Technology, University of Zurich Sep. 2015 – present
Linux Days Zurich, CH
Topics: Free and Open Source Software · Scientific software · Package management

Heidelberg University — Centre for Organismal Studies Sep. 2009 – Feb. 2010
Molecular Biology and Microbiology Practical Course Heidelberg, DE
Topics: DNA extraction and digestion · Gel electrophoresis

GRANTS AND SCHOLARSHIPS

Swiss National Science Foundation Mar. 2020 – Sep. 2021
Postdoc Mobility Fellowship
Scope: Personal and research conference expenses

Amazon Web Services Dec. 2017 – Dec. 2018
Amazon Research Credits Grant
Scope: Computational expenses

German Academic Exchange Service Oct. 2008 – Nov. 2013
German Foreign Schools Scholarship
Scope: Tuition and personal expenses in Germany

Baden-Württemberg Foundation Sep. 2010 – Jan. 2011
Baden-Württemberg Universities' Foreign Exchange Scholarship
Scope: Tuition and living expenses in Russia