Adrian Bertagnoli

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EDUCATION

ETH ZURICH
MSc in Biomedical Engineering
Cum GPA: 5.63/6.00
Exp. Oct 2022 | Zurich, Switzerland

KING'S COLLEGE LONDON
BEng in Biomedical Engineering
Grad. August 2020 | London, UK
First Class Honours

INTERNATIONAL BACCALAUREATE
Received May 2017| Vienna, Austria

RELEVANT COURSES

GRADUATE
Learning in Deep Artificial and Biological Neuronal Networks
Models of Computation
Introduction to Neuroinformatics
Neuromorphic Engineering I
Neuromorphic Intelligence
Neural Systems
Systems Neuroscience

UNDERGRADUATE
Machine Learning for Biomedical Applications
Object-Oriented Programming
Computational Applied Biomathematics
Computational Methods
Signal & Image Processing
Signals & Systems
Computer Programming
Computational Statistics

SKILLS

PROGRAMMING
Preferred Language:
• Python
Advanced:
• MATLAB • Javascript • TensorFlow
• PyTorch • html Intermediate:
• C • C++ • Nvidia CUDA C
Beginner:
• Rust • Solidworks

LANGUAGES
Native Level:
• German • English
Basic Comprehension:
• Spanish

RESEARCH EXPERIENCE

MIT & JANELIA RESEARCH CAMPUS | Master Thesis
April 2021 – Present | Cambridge, MA
- Investigating the Properties of Neural Manifold during inter-population projections
- Analysing the topology of the Grid Cell Manifold and the Projected Place Cell Manifold

MIT Graduate Researcher
Sep 2021 – Present | Cambridge, MA
- Investigating modularity and compositionality in the motor cortex
- Using a task-fitted RNN to perform compositional movements by actuating a biophysical arm model

UNIVERSITY OF ZURICH Research Assistant
Sep 2021 – Present | Zurich, Switzerland
- Working in the Plasticity Lab conducting research into predictors of dementia within the WISC test framework

ETH ZURICH Voluntary Researcher
Sep 2021 – Present | Zurich, Switzerland
- Investigated the effects of Asymmetric sparsity in bio-plausible learingin algorithms such as (Direct) Feedback Alignment

ETH ZURICH Semester Project
Sep 2021 – Present | Zurich, Switzerland
- Investigated Feature Extraction with a Neuromorphic front-end and generate a suitable input representation for Spiking Neural Networks
- Responsible for creating accurate simulation of the asynchronous delta module and maintaining a github repo used by the entire institute of Neuroinformatics

KING'S COLLEGE LONDON Bachelor Thesis
Sep 2021 – Present | Zurich, Switzerland
- Used a Double Deep Q network coupled with a biophysical simulation of a 2D left atrium, to improve ablation strategies

KING'S COLLEGE LONDON Research Fellowship
Sep 2021 – Present | Zurich, Switzerland
- Worked on GPU based acceleration of biophysical simulations using Nvidia CUDA C
- Awarded the King's Experience Research award.

PUBLICATIONS

[1] L. Muizniece, A. Bertagnoli, A. Qureshi, A. Zeidan, A. Roy, M. Muffoletto, and O. Aslanidi. Reinforcement learning to improve image-guidance of ablation therapy for atrial fibrillation. *Frontiers in Physiology*, 12, Aug. 2021.

EXTRACURRICULAR ACTIVITIES

- President of Biomedical Engineering Association ETH Zurich since Sep 2021
- Working on embedded bio-monitoring systems
- Created a seminar series for talks by experts in Industry and Academia