Ana Daria Laslo

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EDUCATION

PhD Candidate, Department of Health Science and Technology, ETH Zürich, Switzerland   *March 2024-presemt*
- Focusing on generative computer vision approaches applied to medical imaging data
- Using guided denoising diffusion models to predict anatomical tumor growth in pediatric brain-tumor patients

MSc Computational Biology and Bioinformatics, ETH Zürich, Switzerland   *September 2020-January 2024*
- Focusing on courses applying a data driven approach to life sciences problems
- Courses include: Data Mining I & II, Introduction to Machine Learning, Big Data, Immunoengineering, Systems Genomics, Data Structures and Algorithms, Computer Science, Probabilistic Artificial Intelligence

BSc Medical Biosciences, Imperial College London, United Kingdom (First Class)   *October 2017-July 2020*
- Modules include: Statistics, Genetics and Genomics, Immunology, Precision Medicine, Laboratory
- Developing hypothesis and planning workflow for two one-year projects in the lab module as part of a team
- Completed numerous assessed reports and presentations in a conference-like environment
- Awarded "Submission of distinction" for the exceptional standard of work as part of an in-course assessment

Sciences (English intensive), "Andrei Saguna" National College, Romania.   *September 2013-June 2017*
- Baccalaureate: Mathematics (10), Biology (9.6), Romanian (9.4); A Level: Chemistry (A*)

WORK EXPERIENCE

Master Thesis, *Biomedical Data Science Laboratory,* Zurich   *May 2023 -December 2023*

- Implemented denoising diffusion probabilistic models for generating medical imaging data (brain tumor MRI)
- Used guided diffusion models for image-to-image translation tasks (e.g. diseased brain to healthy brain)
- Developed validation methods for generated medical images using radiomic features

Intern, *F. Hoffmann-La Roche Ltd,* Basel   *September 2022- March 2023*

- Developed gene expression report templates and web interfaces based on single-cell RNA-seq data, focusing on meaningfully grouping and visualizing the data in a simple, accurate and effective manner
- Identified and analyzed relevant internal and external single-cell RNA-seq datasets
- Connected with various stakeholders across disease areas to understand their needs and adapt the templates accordingly

Research Project, *ETH Systems and Synthetic Immunology Laboratory,* Zurich   *March 2022- July 2022*

- Developed a machine learning pipeline with a focus on single-cell sequencing data as part of Platypus, a package designed for computational immunology
- Developed functions enabling the extraction of features considering different encodings, classification and regression models for predicting antibody features (binding, affinity)
- Applied the built methods on in-house datasets obtaining insightful results

Teaching Assistant, *University of Zürich,* Zurich   *February 2022-July 2022*

- Prepared and delivered weekly tutorials for the Introductions to Statistics course
- Covered topics starting from probability basics to Bayesian approaches and Monte Carlo methods
- Compiled theoretical and practical resources (in R) for the classes and graded weekly assignments

Research Assistant, *University of Zürich,* Zurich   *September 2021-August 2022*

- Developed measures of similarity between visual stimuli part of a cognitive assessment using different approaches (crowd sourcing, feature-based, neural networks)
- Processed eye-tracker and similarity data and modeled gaze time using machine learning approaches
- Preparing code and writing a manuscript for publication

R&D Intern, *AstraZeneca,* Cambridge (UK)   *October 2019-July 2020*

- Developed a project involving the use of Artificial Intelligence in clinical prediction
- Compiled the data preprocessing pipeline for time series inputs
- Generating a deep learning model (recurrent neural networks) to be used as a prognosis tool
- Participated in regional and international meetings as part of the Clinical Pharmacology and Safety Sciences department

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SKILLS

Programming	Python (including Tensorflow, Keras, PyTorch), R, JavaScript/TypeScript, CSS, HTML, C++, SQL, SparkSQL, JSONiq
General	LaTeX, MS Office Suite
Research experience	Generative modelling, Classical machine learning, Single-cell RNA-sequencing, Neural networks, Reinforcement learning, Oncology, Immunology, Time series data, Psychology, Statistics, Full-stack web development, MRI Imaging
Lab experience	Cell culture, RT-PCR, qPCR, Western Blot, Bacterial cloning, Bacterial transformation, Flow cytometry, Sequencing, CRISPR-Cas9

LANGUAGES

Romanian – native
English – fluent (C2)
German – intermediate (B1)

EXTRACURRICULAR ACTIVITIES

Volunteering	Student representative of the Computational Biology and Bioinformatics MSc Committee member for the student's association at ETH Zurich Treasure at the Medical Biosciences society at Imperial College London Red Cross Brasov, Romania (2016, 2017) Operations team at sports events: Bike Race and Half-Marathon (2016-2018)
Other activities	Tennis, development team player, IC Lawn Tennis Society (2018-2019) Deep Learning Specialization (Coursera) – Certification (2019) PULSE MIT Health Hackathon (2018) UK Investment Banking Series (UIBS), Mergers and Acquisitions section (2018)
Other interests	Cooking || Running || Traveling || Tennis ||Formula 1 || Squash