Natalia Glazman

natalia.glazman@outlook.com Natalia Glazman

Education

King's College London *2024 - 2027*
PhD in Digital Twins for Healthcare

- Causal modelling of dementia: AI-powered patient digital twins from multimodal observational data
- The project aims to model how dementia progresses and how different treatments affect patients with memory problems by learning causal relationships between symptoms, biomarkers, and interventions using AI. Using real-world data and counterfactual modeling, it will predict individual disease paths and show how different clinical decisions could change outcomes.
- Supervised by Dr. Jorge Cardoso and Prof. Sebastien Ourselin
- Jointly funded by the DT4H CDT and Siemens

Imperial College London *2023 - 2024*
MRes Biofonformatics with Theoretical Systems Biology

- Degree classification: Distinction
- Maths module: Calculus, Statistics, ODEs, Linear Algebra, Stochastic approaches, Linear Stability Analysis, classical machine learning and deep learning
- Bioinformatics module: metagenomic analysis, genome assembly, genome annotation
- **Project 1**: comparing classical Bayesian algorithms to Bayesian deep learning for parameter inference in gene regulatory networks (supervised by Ruben Perez-Carrasco) - 72.4%
- **Project 2**: Optimising a biologically inspired generative AI technique to analyse large-scale neural data (supervised by Sadra Sadeh and Nicolas Skatchkovskiy) - working on VAE architecture based on transformer attention using PyTorch - 77.35%

Imperial College London *2019 - 2023*
BSc (Hons) Biochemistry with Research Abroad

- Degree classification: 1st
- Final year undergraduate research project on modelling the thermal dependence of bacterial enzymes using Python and R, supervised by Dr Samraat Pawar (achieved 77%)
- Wrote a dissertation on RNA-seq analysis of neurodegenerative diseases
- Modules include: Computational Omics, Integrative Systems Biology, Cell Biology, Genes and Genomics, Enzymes and Metabolism, Biological Chemistry
- Modelling and analysing biological data using Python and R in several modules, with practical sessions covering: RNA-seq data analysis, machine learning, variant identification, genome assembly

Experience

Bioinformatics Intern London, United Kingdom
Esox Biologics Ltd *June 2023 - Sept 2023*

- Planned and developed a genomic database of aquatic microorganisms for analysis of water samples
- Used Python and command line tools to create and manipulate the multi-TB database
- Used Kraken2 and MetaPhLan software for the taxonomic analysis of shotgun metagenomic data
- Transferred database to Microsoft Azure cloud storage and used Azure virtual machines to run analysis

Research Intern Barcelona, Spain
Centre for Genomic Regulation (CRG) *June 2022 – Sept 2022*

- Developed an automated deep learning-based pipeline for the recording of Novel Object Recognition test (NOR), a popular assessment of memory in rodents (publication in preparation)
- Implemented, trained, and optimised a convolutional neural network for image classification using PyTorch
- Helped train researchers in the implementation of the pipeline in their experiments

- Gained experience wrangling data in a collaborative project using Python, evaluating the 'hidden' confounding variables of the NOR assessment

Research Assistant Valencia, Spain
University of Valencia (Fariñas lab) *Sept 2021 – Jun 2022*

- Year-long placement at the Neurodegenerative Disease Research Centre, contributing to several different projects in the lab
- Completed a thesis on the ciliation states of quiescent and activated neural stem cells, as well as aspects of their mechanosensing (achieved 89% grade)
- Developed general laboratory skills as well as specific skills in cell culture (murine cells), immunofluorescence staining and molecular biology (PCR, MaxiPrep, transfection, Western Blot)
- Gained experience in confocal and electron microscopy
- Learnt Spanish to a professional working level

Writer, Publicity Officer London, United Kingdom
Felix, Imperial College London Newspaper *2020-2022*

- Responsible for social media presence as well as managing external and internal communication
- Contributed to the science and sustainability sections
- Carried out an interview with the lead anti-lockdown scientist, Sunetra Gupta. Article linked here.

Intern London, United Kingdom
Ancora.ai *Aug 2021 – Sept 2021*

- Created social media content to help reach more clients to recruit for clinical trials
- Wrote summary scientific pieces covering oncology clinical trial results to communicate to lay audience
- Worked on 5 successful market research studies, using the clients' feedback to adjust my approach accordingly

Biotech Launchpad Participant London, United Kingdom
Imperial SynBic society and Synbio UK *2020*

- Researched and developed a start-up idea based on cancer immunotherapy (idea centred around the use CAR-NK cells as an off-the-shelf cancer treatment)
- Worked together with a team of students from different academic backgrounds to coordinate the project and pitch the idea to a panel of judges

Publications

Dynamic causal discovery in Alzheimer's disease through latent pseudo-time modelling, ***NeurIPS CauScien: Uncovering Causality in Science workshop*** 2025

Natalia Glazman, Jyoti Mangal, Pedro Borges, Sebastien Ourselin, Jorge Cardoso

A Biologically Inspired Attention Model for Neural Signal Analysis 2024
(pre-print)

Nicolas Skatchkovsky, **Natalia Glazman**, Sadra Sadeh, Florencia Iacaruso

No universal mathematical model for thermal performance curves across traits and taxonomic groups, ***Nature Communications*** 2024

Dimitrios - Georgios Kontopoulos, Arnaud Sentis, Martin Daufresne, **Natalia Glazman**, Anthony I. Dell, Samraat Pawar

Skills and achievements

Entrepreneur First Bio x AI Hackathon Winner 2024

- Won the hackathon with Wavelet, a transformer-based model that enables real-time EEG to AI-Derived MEG conversion, enabling better and more accessible diagnosis of neurological disease.

IT skills: Python (proficient), R (beginner), Git, Microsoft Azure, Microsoft Office