Anna Toidze

MASTER'S STUDENT IN COMPUTATIONAL BIOLOGY AND BIOINFORMATICS

📱 +41767599160 | ✉ atoidze@ethz.ch | 🔗 github.com/AnnaToi01

Education

Msc in Computational Biology and Bioinformatics at ETH Zürich, D-BSSE   *Zürich, Switzerland*
Sept 2023 - now
- **ESOP Scholarship**: top 3 % of all incoming MSc students at ETH Zürich

BSc in Biochemistry at Ruhr University Bochum, Faculty of Chemistry and Biochemistry   *Bochum, Germany*
Oct 2019 - Sept 2022
- **Wilke Award**: ranked 1st in Bachelor's degree in Biochemistry, GPA 1.0/1.0

Bioinformatics for Biologists, Additional Education at Bioinformatics Institute   *Saint Petersburg, Russia*
Sept 2021 - May 2022
- **Award**: ranked 1st out of 53 of the year, GPA 5.0/5.0

High School at Authorized School No. 6   *Tbilisi, Georgia*
Sept 2016 - May 2019
- **International Biology Olympiad**: Bronze medals in 2018 and 2019

Research

Internship in pRED Ophthalmology at Roche at Roche, pRED   *Basel, Switzerland*
Apr 2025 - Now
- scRNA analysis in a pre-clinical mouse model of subretinal fibrosis in Python and R

Internship in Laboratory of Prof. Dr. Sebastian Bonhoeffer at ETH Zürich, D-USYS   *Zürich, Switzerland*
Nov 2024 - Mar 2025
- Dynamically modeling the spread of plasmids carrying antibiotic-resistance genes in R using ODEs

Internship in Laboratory of Prof. Dr. Andreas Wagner and Dr. Aleks Nivina at UZH, IEU   *Zürich, Switzerland*
Sept 2024 - Oct 2024
- Stochastically modelled the recombination of antibiotic-producing polyketide system in *Streptomyces* in Python

Laboratory Technician in Laboratory of Prof. Dr. Fyodor Kondrashov at OIST, Japan   *Onna, Japan*
Oct 2022 - Aug 2023
- Created *E. coli* mutant libraries of GFPs, sorted them using FACS, improved prediction of function proteins through ML
- Devised and implemented a populations genetics model for epistasis in Rust
- Guided an intern in preparation of *E. coli* GFP library, sorting using FACS and successful preparation for sequencing

Internship in Laboratory of Prof. Dr. Fyodor Kondrashov at ISTA, Austria   *Klosterneuburg, Austria*
Apr 2022 - Sept 2022
- Cloned and purified green fluorescent proteins with varying sequence divergence from the wild-type sequence
- Experimentally assessed the physical stability of the proteins and correlated it with the mutational robustness using Python ([GitHub](#))

Internship in Laboratory of Prof. Dr. Maria Logacheva at Bioinformatics institute   *Online*
Feb 2022 - May 2022
- Investigated the expression patterns of egg-cell specific genes in crops using Python, R, phylogenetics tools

Internship Laboratory of Prof. Dr. Ute Krämer at RUB, MGPP   *Bochum, Germany*
Jan 2021 - Jan 2022
- Implemented a pipeline to investigate the contribution of CNV to metal tolerance in *A. halleri* using bioinformatics tools, R

Student at School of Molecular and Theoretical Biology   *Barcelona, Spain - Online*
Aug 2019
- Investigated intracellular parasites *B. mallei* using Python, bioinformatics tools in Laboratory of Prof. Dr. Mikhail Gelfand in 2019

Teaching and Volunteering

Teaching Assistant in Computational Systems Biology at ETH Zürich   *Zürich, Switzerland*
Oct 2024 - Now
- Writing lecture notes for computational systems biology class under Prof. Dr. Jörg Stelling

Teaching Assistant in Maths and Supervisor in Laboratory practical at RUB   *Bochum, Germany*
Oct 2020 - Sept 2022
- Supervised tutorial classes, graded assignments and exams for the maths courses for first-year (bio-)chemistry students
- Monitored experiments and graded reports of 20 students the introductory chemistry practical

Staff member and Mentor at School of Molecular and Theoretical Biology   *Online*
Aug 2020 - Aug 2022
- Introduced machine learning, Python, Git to high-school students in Laboratory of Prof. Dr. Olga Kalinina in 2022
- Mentored 12 students throughout their stay at the online summer school and beyond, and organized school-wide social activities

Skills and Honors

Experimental	Cloning; bacterial culture; electrophoresis; Western Blot; PCR; extractions; transformation; microscopy; FACS; Benchling
Bioinformatics	Python; R; version control; HPC computing; NGS analysis; phylogenetics/-dynamics; data analysis; ML; protein modeling
Conferences	**SMBE 2025, Young Investigator Award**: *Hiking Peaks and Valleys of GFP Fitness Landscapes for Data-Driven Protein Design*
Summer Schools	**Guarda** Summer School in Evolutionary Biology (2024), School of Molecular and Theoretical Biology (2019-2022)
Languages	Georgian (native), English (fluent), German (fluent), Russian (fluent)