# Klavdiia Naumova, MSc

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## EDUCATION

**Swiss Federal Institute of Technology in Lausanne (EPFL)**  
*MSc in Life Sciences Engineering, Minor in Data Science - **GPA** - 5.2 (max. 6.0)*  
**09 2021 – 07 2023**  
*Lausanne, Switzerland*

**Moscow State University (MSU)**  
*Specialist degree in Fundamental and Applied Chemistry - **GPA** - 5.0 (max. 5.0)*  
**09 2015 – 06 2021**  
*Moscow, Russia*

### RELEVANT COURSES

- Analysis
- Linear Algebra
- Probability theory and statistics
- Machine Learning
- Deep Learning
- Optimization for Machine Learning
- Applied Data Analysis
- Applied Biostatistics
- Natural Language Processing
- Image Processing
- Image Analysis and Pattern Recognition
- New tools & research strategies in personalized health
- Functional Programming

## MASTER THESIS

**Machine Learning and Optimization Laboratory, intelligent Global Health Group, EPFL**  
*inDISCO: interpretable DIStributed COllaborative learning for biomedical images*  
**02 2023 – 07 2023**

## SEMESTER PROJECTS

**iGH/MLO EPFL**  
*xDISCO: eXplainable DIStributed COllaborative learning for images*  
**09 2022 – 01 2023**

**MicroBioRobotic Systems Laboratory, EPFL**  
*Optical Elastography Pipeline for Shear Modulus Calculation*  
**02 2022 – 06 2022**

## COURSE PROJECTS

**Machine learning:** Detection of traffic cones coordinates using neural networks — **12 2021**

**Applied data analysis:**  
Understanding vegetarianism and veganism through the media using sentiment analysis — **12 2021**

**Deep Learning:** Image denoising using Noise2Noise neural network — **05 2022**

**Natural language processing:** Developing language models for digital educational assisting — **06 2023**

## OTHER RESEARCH EXPERIENCE

**Laboratory of Surface Phenomena in Polymer Systems**  
Institute of Physical Chemistry and Electrochemistry  
Russian Academy of Science (IPCE RAS)  
*Synthesis of silica nanocontainers for drug encapsulation*  
**10 2015 – 06 2021**

**Laboratory of Biologically Active Organic Compounds, MSU**  
*Synthesis of a 2-thiohydantoin derivative for cancer treatment*  
**10 2017 – 05 2018**

## CONFERENCES

**Workshop SMART-AI: Leveraging AI for Health Decision Support Systems**  
*Talk on Distributed Learning*  
**04 2024**  
*Lausanne, Switzerland*

**EPFL Engineering Industry Day 2023**  
*xDISCO poster presentation*  
**03 2023**  
*Lausanne, Switzerland*

## INTERNSHIPS

**iGH/MLO EPFL**                                                          **08 2023 – 02 2024**
*Research Intern*                                                        *Lausanne, Switzerland*

**Nanolive SA**                                                          **07 2022 – 09 2022**
*Deep Quantitative Biology Intern*                                      *Tolochenaz, Switzerland*

## OTHER WORK EXPERIENCE

Student Assistant at the CS-433 Machine learning course (EPFL)           **09 2022 – 01 2023**
Student Assistant at the MATH-205 Analysis IV course (EPFL)              **02 2022 – 06 2022**
Laboratory Assistant (IPCE RAS)                                          **07 2019 – 06 2021**
Laboratory Technician (IPCE RAS)                                         **06 2018 – 07 2019**

## TECHNICAL SKILLS

Python (PyTorch, Pandas, OpenCV), JavaScript, TypeScript, HTML, CSS, Git, LaTeX, VS Code, Jupyter, Fiji, Fusion360

## LANGUAGES

English: advanced, IELTS 8.5
French: intermediate
Russian: native

## PUBLICATIONS ⬈

1. K.Naumova et al. / My-This-Your-That—Interpretable Identification of Systematic Bias in Federated Learning for Biomedical Images / Under review in npj Digital Medicine. Preprint available at https://www.researchsquare.com/article/rs-3910714/v1

2. E. Ozelci et al. / Mechanical characterization of biological samples using robot-assisted optical microelastography / MARSS, July 25–29, 2022, Toronto, Canada

3. K. Naumova et al. / Mesoporous silica particles based on complex micelles of poorly water-soluble compounds. One simple step to multidrug carriers / Microporous Mesoporous Mater. 2021. V. 316. P. 110911. DOI: 10.1016/j.micromeso.2021.110911

4. O.V. Dement'eva et al. / Drug-templated mesoporous silica nanocontainers with extra high payload and controlled release rate / Colloids Surf., B. 2020. V. 185. P. 110557. DOI: 10.1016/j.colsurfb.2019.110577

5. K. Naumova et al. / Solubilization as a Method for Creating Hybrid Micellar Templates for the Synthesis of Multifunctional Mesoporous Containers / Colloid J. 2019. V. 81. No. 4. P. 416. DOI: 10.1134/S1061933X19040094

6. O.V. Dement'eva et al. / Sol–gel synthesis of mesostructured SiO2 containers using vesicles of hydrolyzable bioactive gemini surfactant as a template / Colloid J. 2017. V. 79. No. 4. P. 451. DOI: 10.1134/S1061933X17040020

## VOLUNTEERING

Tutor at the children's intellectual creativity camp                     **08 2018**
                                                                         *Saransk, Russia*

Photographer and designer at the children's intellectual creativity camp **08 2017**
                                                                         *Saransk, Russia*