Michelle Elias

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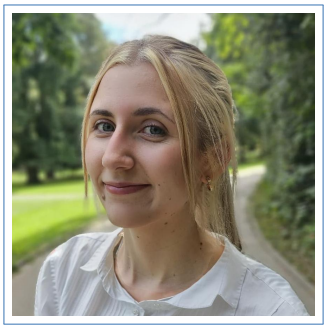

Education

Oct 2025 – today **M.Sc. Biophysics**, *Humboldt-Universität zu Berlin*, Elective modules in systems biology, medical biophysics, and optobiology

Oct 2019 – Apr 2025 **B.Sc. Biologie**, *Humboldt-Universität zu Berlin*, Berlin, **Grade: 1.9**

- **Bachelor Project** (Sep 2024–Jan 2025, **Grade: 1.0**) and **Bachelor Thesis** (Jan 2025–Apr 2025, **Grade: 1.0**): Development and validation of a physiologically-based pharmacokinetic (**PBPK**) model for Glimepiride at the Systems Medicine of Liver group (König Lab), Institute for Theoretical Biology

2013 – 2019 **Abitur**, *Georg-Büchner-Gymnasium*, Berlin
Bilingual school (english & german), Advanced courses: Mathematics and Arts; Elective course: Mathematics-Informatics

Work Experience

Jan 2026 – today **Student Assistant**, *Humboldt-Universität zu Berlin*, Systems Medicine of the Liver (Pharmacology)
Programming pharmacokinetic models using Python, ODE modeling (SBML), and contributing to the DFG Priority Programme SPP 2311 within the research group of Dr. Matthias König

Apr 2025 – Dec 2025 **Student Assistant**, *Martin Luther Krankenhaus*, Berlin, Medical Controlling
Supporting digitalization of patient records. Trained and onboarded new student assistants.

Sep 2024 – Dec 2025 **Student Assistant**, *Ev. Elisabeth Klinik*, Berlin, Hospital Archive
Helped coordinate and execute archive relocation project, including workflow planning and logistics coordination. Digitized patient records. Trained and onboarded new student assistants.

Jan 2023 – Dec 2023 **Student Assistant**, *Martin Luther Krankenhaus*, Berlin, Hospital Administration
General administrative support including patient file management, insurance processing, and various back-office tasks.
Excellent work reference received

2022 **Student Assistant**, *Johanniter – Ukrainian Refugee Center*, Berlin
Provided support for refugee registration, orientation, and connection to essential services

2021 **Student Assistant**, *Malteser – COVID-19 Vaccination Center*, Berlin
Assisted medical personnel with vaccine administration and patient flow coordination

Internships

Apr 2024 – Jun 2024 **Research Intern, Bayer AG (Pharmaceuticals)**, Wuppertal, Cardiovascular Precision Medicines Department, Dr. Jutta Meyer

- Cultured hiPSC-derived cardiomyocytes and conducted gene knockdown experiments using siRNA transfection
- Performed molecular analyses including qPCR, Western Blot, and DNA/RNA/protein extractions
- Conducted statistical analysis and data visualization of experimental results for research team
- Gained comprehensive insights into pharmaceutical research and precision medicine applications

Excellent internship reference received.

Skills & Competencies

Programming & Data Tools Python (NumPy, Pandas, Seaborn, Matplotlib), SBML, Git/GitHub, Marimo, Excel (certified) and general Office programs

Bioinformatics & Modeling Systems biology, PBPK and ODE modeling in Python, statistical analysis, data visualization

Research Precision medicine, digital twins in healthcare, systematic literature review, data curation

Laboratory PCR/qPCR, Western Blot, cell culture, molecular biology

Healthcare Hospital operations, patient data management, hospital information systems

Languages

German Native speaker

English C1 (Jul 2025 TOEFL iBT score: 113 points)

Polish Native comprehension, basic conversational ability

Publications

2025 **Elias, M., König, M.**, *A Digital Twin of Glimepiride for Personalized and Stratified Diabetes Treatment.*, Frontiers in Pharmacology | Sec. Pharmacogenetics and Pharmacogenomics, doi: 10.3389/fphar.2025.1686415

- Developed a whole-body PBPK **digital twin** quantifying genetic, physiological, and clinical factors driving pharmacokinetic variability; validated model against data from 20 clinical studies, enabling patient stratification and personalized dosing strategies
- Deployed an interactive **web application** (glimepiride.de) for real-time patient-specific simulations

2025 **Elias, M., König, M.**, *Reproducibility Of A Digital Twin of Glimepiride for Personalized and Stratified Diabetes Treatment*, Physiome, doi: 10.36903/physiome.28379193

- Verified reproducibility of pharmacokinetic simulations across patient subgroups