



Lilian Denzler

PhD Student

Bioinformatics and AI-assisted drug discovery PhD Student at UCL. Holds extensive experience in protein biochemistry and cancer research. Proficient in developing machine learning models focusing on antibody and TCR-based drug engineering and discovery.

Experience

○ 2021-2025

Univeristy College London, Supervisor: Prof. Andrew CR Martin

PhD Student

Scholarship & Collaboration: Awarded an MRC iCase scholarship and collaborating with Immunocore, an Oxford-based biotechnology company specializing in innovative T-cell receptor-based immunotherapies for cancer, infectious, and autoimmune diseases.

PhD Focus:

- Innovating methods for predicting T-cell receptor complexes' stability and guiding sequence mutation to enhance stability while preserving affinity.
- Developing software for reliable TCR sequence numbering, crucial for analysis and model training.
- Employing graph neural networks to forecast properties and interactions of TCR-complexes.
- Emphasizing explainability to understand molecular basis of predictions and distill knowledge from AI systems.

Future Plans: Develop accurate TCR-modelling software.

Additional Experience: Teaching assistant at UCL; ConceptionX start-up accelerator. Alan Turing DSG May 2023

○ 09/20-01/21

In.vent Diagnostica

Research Assistant and Communications Coordinator

Helped establish new protein array project at biotech start-up. Diagnosis and treatment-monitoring via biomarker identification (cancer, autoimmune diseases). Company representative at Analytica Conference and Medica Conference.

○ 06/2019-05/2020

UCL Cancer Institute

Research Assistant

CAR-T cell treatment for AML. Cloning (and plasmid design), flow-cytometry various immuno- fluorescent techniques, T-cell isolation, cell-culturing, blood sample handling.

○ 2017-2021

University College London

MSci Biochemistry

Extensive theoretical and lab experience. Masters research project: Machine learning models to predict accuracy and determine predictive feature sets for CDRH3 modelling in antibodies. First Class Hon.

Extracurriculars:

- Internship Freie Universität Berlin (3months): Investigated ADAP's role in T-cell receptor stimulation
- Committee of UCL Tech Society, UCL Cancer Charity Alliance, and UCL Society of Applied Psychedelics: Organized talks, journal clubs, hackathons, fundraising.
- GIANT Health Event 2018, Europe's largest health tech conference, organisation team
- ProLink UCL: Interviewer of UCL's lecturers about their current research

Contact

Email

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LinkedIn

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Expertise

Computational

- BASH
- Python (advanced)
- Intermediate HTML, CSS, JS
- TensorFlow & Keras
- PyTorch & PyTorch Geometric
- MongoDB: Database Management
- Data visualization

Wet Lab

- Mass Spectrometry
- Flow-cytometry
- Circular Dichroism
- NMR
- RNA-seq
- Cloning, expression, protein purification, cell culturing (insect, human, bacterial)

Language

English (native)

German (native)

Publications

Lopez et al. Inhibition of lactate transport by MCT-1 blockade improves chimeric antigen receptor T-cell therapy against B-cell malignancies. *J Immunother Cancer*. 2023

Under Review

Denzler et al. Predicting the Quality of CDR-H3 Antibody Loop Structural Models. 2023

Liu et al. Protein-protein interaction benchmark set for machine learning methods development. 2023