

# Philip Hartout

## Curriculum Vitæ

🏠 112 Friesenbergstrasse,  
Zurich, Switzerland  
✉ philip.hartout@protonmail.com  
🔗 pjhartout.github.io  
🌐 philip-hartout  
📱 pjhartout  
☎ (+41) 079 170 79 12  
🗣 French and Dutch



### 🎓 Education

- 15/09/2022– **ETH Zürich**, PhD student.  
Present
  - PhD student at the Machine Learning and Computational Biology Laboratory of Prof. Dr. Karsten Borgwardt. From 1/2/2023 at the Max Planck Institute of Biochemistry in Munich.
- 2019–2022 **ETH Zürich**, *MSc in Computational Biology and Bioinformatics* GPA: 5.34/6.
  - Computer Science courses*: Focus on Machine Learning (course work [↗](#)), Data Mining,
  - Biology Courses*: Genomics, ImmunoEngineering, Single Cell Data Analysis, Computational Biology, (see example final project [↗](#), journal club [↗](#))
  - Academic internship completed with the *University of Amsterdam Oncogenomics department*. (code [↗](#))
  - Academic internship completed in the *Machine Learning and Computational Biology (MLCB)* research group to design a topological data analysis pipeline to characterise Alzheimer's disease using structural MRI images. (code [↗](#), report [↗](#))
  - Master's Thesis in the *MLCB* research group, designing a composable python library that evaluates generative protein models using maximum mean discrepancy. Involves working with kernel functions, topological data analysis, point clouds and sequence data.
- 2015–2018 **Amsterdam University College**, *BSc in Liberal Arts & Science* GPA: 3.68/4 (Cum Laude).
  - Selective honors programme with an interdisciplinary and intercultural focus. Major focus on biomedical sciences and computer science.
  - Bachelor's thesis: Assessment of Cerebrospinal Fluid and Plasma Concentrations of Amyloid Precursor Protein Products and Clusterin as Biomarkers for Prodromal Late-Onset Alzheimer's Disease. (report [↗](#))
  - Editor-in-chief of AUC's Academic Journal** – Led a team of 10 editors to publish 2 journal volumes. [↗](#) [↗](#)
  - Tutor** – Tutoring Syrian refugees in various disciplines (English, Dutch, Statistics, Calculus, Academic Writing) through the Right2Education foundation [↗](#).

### 👛 Professional Experience

- 2021 **Computational Biologist**, *Novartis Institutes of Biomedical Research (NIBR)*, Switzerland.
  - Developed an end-to-end transformer-based modeling pipeline predicting peptide presentation by MHCII. Deployed within NIBR to guide therapeutic sequence design (monoclonal antibodies, therapeutic peptides).
- 2018-2019 **Data Scientist**, *Performatio*, The Netherlands.
  - Worked within a data science team to develop a generic hospital-wide occupancy predictor for each department based on admission, length of stay, and routing patterns. Resulted in approximately 300% MSE reduction in occupancy prediction w.r.t previous version of the software. In charge of design, development and testing.
  - Helped sell and deploy the aforementioned software to 40 Dutch hospitals by pitching the product to clients.
  - Prototyped a platform to allow for the fast, modular, reproducible and scalable development and deployment of multiple data pipelines, one of which was extracting an ICD-10 diagnosis from discharge letters using NLP.

### 🔧 Technical Skills

`</>` **Programming languages**: proficient in R and Python; intermediate in Javascript (ES2016), Java, Matlab.  
>\_ **Productivity tools**: unix-based operating systems, emacs (org mode), L<sup>A</sup>T<sub>E</sub>X, jira, docker, git (GitHub workflows).  
☰ **Other tools**: Cloud (GCP), RESTful APIs, Bioconductor, poetry, conda. 🗄 **Databases**: MongoDB, Spark, SQL.  
📦 **External libraries/frameworks**: tensorflow, pytorch, pandas, giotto-tda, matplotlib, plotly, dash, nextjs, react.  
💡 **Skills**: design and implementation of machine learning pipelines; neurodegenerative diseases, biological sequence analysis & single cell data analyses; technical talks (example [↗](#)); pair programming; Agile/Scrum software development. Maintenance and design of Python libraries (see [fastw1k](#) [↗](#))

### 🗣 Languages

Native: French, Dutch  
Fluent: English  
Conversational: German

### ❤ Interests

Sailing, 10 years of high performance sailing. [↗](#)  
Coaching sailing teams in international competitions.  
Hiking, outdoors