

FLAVIA HODEL

Data analyst in Human Genomics

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Experiences

Data analyst in Human Genomics University Hospital of Lausanne (CHUV)

📅 2022 - ongoing

As a data analyst in the Precision Medicine Unit of the CHUV, I conduct population pharmacogenetic studies on the determinants of therapeutic response and drug toxicity under real-life conditions of use.

PhD student in Human genomics & Computational biology Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

📅 2018 - 2022

Supervisor: Prof. Jacques Fellay

I use genome-wide genotyping data, bioinformatics tools and statistical methods to explore the interplay between human genetic variation, persistent infections and chronic inflammation, and understand their independent and combined effect on coronary artery disease. It is a multidisciplinary and collaborative project bringing together our in-house data with other biobanks.

Visiting PhD student Wellcome Trust Centre for Human Genetics, University of Oxford

📅 2019

I went to the WTCHG for a collaborative project to identify key genomic determinants of humoral immune responses against multiple human pathogens. This experience allowed the exchange of ideas and data, and provided me with new tools to bring back to my colleagues.

Graduate teaching assistant Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

📅 2018 - ongoing

Subjects taught: Probabilities and statistics, Genetics and genomics, and Introduction to life sciences for School of Computer and Communication Sciences (IC).

Summer trainee Institute of Human Virology, Nigeria

📅 2016

Worked with a team of scientists to address the HIV/AIDS crises in Nigeria through the development of infrastructure for treatment, care, prevention, and support.

Education

Ph.D. in Computational and Quantitative Biology (EDCB) Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

📅 2017 - ongoing

M.Sc. in Bioinformatics University of Lausanne, Switzerland

📅 2016 - 2017

B.Sc. in Biology University of Lausanne, Switzerland

📅 2012 - 2015

Languages

French	Native
Swiss-German	Native
English	Full professional proficiency
Italian	Level C1
Spanish	Level C1

Strengths

- Data analysis
- Bioinformatics
- Biostatistics
- Data visualization
- Genomics
- Infectious diseases
- Biobanks
- Biomarkers
- Immunology
- GWAS
- Linear/logistic regression
- Univariate/multivariate analysis
- Survival analysis
- R
- BASH
- Python
- LaTeX
- GitHub
- Team spirit
- Leadership
- Adaptability
- Eye for detail
- Emotional intelligence
- Conferences and events organisation
- Research presentations

Publications

- Chong, A. Y., Brenner, N., Jimenez-Kaufmann, A., Cortes, A., Hill, M., Littlejohns, T. J., ..., **Hodel, F.**, ..., & Mentzer, A. J. (2022). A frequent ancestral NFKB1 variant predicts risk of infection or allergy. *medRxiv*.
- Shaqiri, A., **Hodel, F.**, da Cruz, J. R., Roinishvili, M., Chkonia, E., Brand, A., ... & Herzog, M. H. (2022). Visual masking deficits in schizophrenia: a view into the genetics of the disease through an endophenotype. *Translational Psychiatry*, 12(1), 1-10.
- Hodel, F.**, Xu, Z. M., Thorball, C. W., de La Harpe, R., Letang-Mathieu, P., Brenner, N., ... & Fellay, J. (2022). Associations of genetic and infectious risk factors with coronary heart disease. *medRxiv*.
- Naret, O., Kutalik, Z., **Hodel, F.**, Xu, Z. M., Marques-Vidal, P., & Fellay, J. (2022). Improving polygenic prediction with genetically inferred ancestry. *Human Genetics and Genomics Advances*, 100109.
- Hodel, F.**, Naret, O., Bonnet, C., Brenner, N., Bender, N., Waterboer, T., ... & Fellay, J. (2022). The combined impact of persistent infections and human genetic variation on C-reactive protein levels. *medRxiv*.
- Hodel, F.**, Chong, A. Y., Scepanovic, P., Xu, Z. M., Naret, O., Thorball, C. W., ... & Fellay, J. (2021). Human genomics of the humoral immune response against polyomaviruses. *Virus Evolution*, veab058.
- Lawless, D., Allen, H. L., Thaventhiran, J., **Hodel, F.**, Anwar, R., Fellay, J., ... & NIHR BioResource–Rare Diseases Consortium. (2019). Predicting the Occurrence of Variants in RAG1 and RAG2. *Journal of clinical immunology*, 39(7), 688-701.
- Scepanovic, P., **Hodel, F.**, Mondot, S., Partula, V., Byrd, A., Hammer, C., ... & Lantz, O. (2019). A comprehensive assessment of demographic, environmental, and host genetic associations with gut microbiome diversity in healthy individuals. *Microbiome*, 7(1), 130.
- Scepanovic, P., Alanio, C., Hammer, C., **Hodel, F.**, Bergstedt, J., Patin, E., ... & Quintana-Murci, L. (2018). Human genetic variants and age are the strongest predictors of humoral immune responses to common pathogens and vaccines. *Genome medicine*, 10(1), 59.
- Hodel, F.**, Patxot, M., Snäkä, T., & Ciuffi, A. (2016). "HIV-1 latent reservoir: size matters". *Future Virology*, 11(12), 785-794.

Conferences

European Society of Human Genetics (ESHG)

Vienna, Austria - Berlin, Germany - Gothenburg, Sweden

📅 2019, 2020, 2021

Early career poster award candidate in 2021

American Society of Human Genetics (ASHG)

San Diego, CA, USA

📅 2018

Professional development

Machine Learning

Online course on Coursera

📅 2020 - Ongoing

📍 Given by Stanford University, CA, USA

- Supervised learning (parametric/non-parametric algorithms, support vector machines, kernels, neural networks)
 - Unsupervised learning (clustering, dimensionality reduction, recommender systems, deep learning)
 - Best practices in machine learning (bias/variance theory; innovation process in machine learning and AI)
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Creative thinking: techniques and tools for success

Online course on Coursera

📅 Certificate earned in Oct. 2020

📍 Given by Imperial College London, UK

- Creativity tools and Thinking styles
 - Morphological analysis
 - TRIZ: The theory of inventive problem solving
 - The SCAMPER method
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Volunteering

Diabètevaud

Ambassador of Diabètevaud

📅 2022 - ongoing

Active in different areas of intervention related to diabetes in the canton of Vaud, Switzerland (awareness, dialogue with the authorities, interventions in the industry, media testimony, ...)

EPFL – ETHZ Summer School "Shaping the Future of (bio)-Medicine"

Co-organiser

📅 2019

Planned the event and location, made budget for the event, contacted sponsors and speakers, co-organised the health hackathon in collaboration with the MIT

Basic computer course for seniors

Instructor at ACLI Svizzera

📅 2016