

# DUROUX DIANE

## EDUCATION

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### ETH ZURICH

Postdoc - ML-based treatment optimization and clinical decision support.  
*ETH AI center*

*Zurich, Switzerland*  
*2023*

### UNIVERSITY OF LIEGE

PhD - Heterogeneity between networks in systems biomedicine: detection and remediation.  
*BIO3 - GIGA-R Medical Genomics*  
Marie Curie Innovative Training Network “Machine Learning Frontiers in Precision Medicine”.  
ELLIS PhD student

*Liège, Belgium*  
*2018 - 2022*

### UNIVERSITY OF RENNES

Master of Bioinformatics.

*Rennes, France*  
*2017-2018*

### ENSAI, National School for Statistics and Data Analysis

Master of Science in Statistics and Biostatistics equivalent (Diplôme d'ingénieur).

*Rennes, France*  
*2015-2018*

### HONG KONG UNIVERSITY

Study abroad, coursework in Data Mining and Big Data.

*Hong Kong*  
*2017*

### UNIVERSITY OF RENNES

Bachelor in mathematics.

*Rennes, France*  
*2015-2016*

## RESEARCH STAY

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### ROCHE

*Roche Diagnostics GmbH*  
Individual-graph-based multi-modality integration for cancer subtyping.

*Online*  
*January - April 2022*

### ETH ZURICH

*Machine Learning & Computational Biology Lab*  
Graph-based models for gene expression data.

*Online*  
*June - August 2021*

### UNIVERSITY OF CALIFORNIA SAN FRANCISCO

*Department of Psychiatry, Institute for Human Genetics*  
Estimated variance explained by gene-gene interactions in Autism Spectrum Disorder.

*San Francisco, USA*  
*April - September 2018*

### PONTCHAILLOU HOSPITAL

*Department of Molecular Genetics and Medical Genomics*  
Feasibility of blood testing for tracking non-small cell lung cancer.

*Rennes, France*  
*July - August 2017*

## PUBLICATIONS

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1. Diane Duroux, Kristel Van Steen. 2023  
**netANOVA: novel graph clustering technique with significance assessment via hierarchical ANOVA.**  
*Briefings in Bioinformatics*, 24(2), bbad029
2. Andrew Walakira, Junior Ocira, Diane Duroux, Ramouna Fouladi, Miha Moškon, Damjana Rozman, Kristel Van Steen. 2022  
**Detecting gene–gene interactions from GWAS using diffusion kernel principal components**  
*Bmc Bioinformatics*, 23(1), 1-18.
3. Renzo J.M. Riemens, Gunter Kenis, Jennifer Nolz, Sonia C. Susano Chaves, Diane Duroux, ..., Daniël L.A. van den Hove. 2022  
**Targeted methylation profiling of single laser-capture microdissected post-mortem brain cells by adapted limiting dilution bisulfite pyrosequencing (LDBSP).**  
*International Journal of Molecular Sciences*.
4. Fentaw Abegaz, François Van Lishout, Jestinah Mahachie John, Kris Chiachoompu, Archana Bhardwaj, Diane Duroux, ..., Kristel Van Steen. 2021  
**Performance of model-based multifactor dimensionality reduction methods for epistasis detection by controlling population structure.**  
*BioData mining*, 14(1), 1-20.
5. Diane Duroux\*, Héctor Climente-González\*, Chloé-Agathe Azencott, Kristel Van Steen. 2020  
**Interpretable network-guided epistasis detection.**  
*GigaScience*, 11.
6. Diane Duroux, Héctor Climente-González, Lars Wienbrandt, Kristel Van Steen. 2020  
**Network Aggregation to Enhance Results Derived from Multiple Analytics.**  
*Maglogiannis I., Iliadis L., Pimenidis E. Artificial Intelligence Applications and Innovations. AIAI 2020. IFIP Advances in Information and Communication Technology*, vol 583. Springer, Cham.
7. Diane Duroux, Hector Climente-González, Aldo Camargo, Lars Wienbrandt, David Ellinghaus, Chloe-Agathe Azencott, Kristel Van Steen. 2019  
**Improving Efficiency in Epistasis Detection with a Gene-based Analysis Using Functional Filter**  
*The 2019 Annual Meeting of the International Genetic Epidemiology Society. Genet. Epidemiol.*, 43:864–925, doi: 10.1002/gepi.22256.

\* Equal contribution

## PRESENTATIONS

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1. ISMB/ECCB 2023 (Poster) Lyon, France  
Enhancing Disease Subtype Prediction through Network-Driven Multi-Modality Fusion 2023
2. MLFPM symposium (Oral presentation) Munich, Germany  
Heterogeneity between networks in systems biomedicine 18 October 2022
3. Roche R&D fair (Poster) Online  
Graph-based multi-modality integration for prediction of prostate cancer severity 2022
4. ISCB 42 Lyon (Poster) Online  
Patient heterogeneity assessment via network-based ANOVA. 21 July 2021
5. TranSYS training school (Oral presentation). Online  
Comparison of heterogeneous networks representing complex data analysis problems. 24 November 2020

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| 6. AIAI 2020 (Oral presentation)   | Online             |
| Network aggregation to enhance results derived from multiple analytics.                          | 5-7 June, 2020     |
| 7. IGES 2019 (Poster)  | Houston, USA       |
| Improving efficiency in epistasis detection with a gene based analysis using functional filters. | 12-14 October 2019 |

## TEACHING

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**Learning from data - Computational approaches to genetic data**  
Teaching assistant - Practice session

Spring, 2021  
University of Liège

## OUTREACH EVENT

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Competition "My PhD in 180 seconds", national finalist.

March, 2021

## OTHER

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Reviews for the journal Briefings in Bioinformatics