

# Anne-Claire HAURY

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## Education

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- 2009 - **PhD candidate : *feature selection in bioinformatics*.**  
Advised by Dr Jean-Philippe Vert. Defense scheduled December 2012.  
Center for Computational Biology, Mines ParisTech/INSERM U900/Institut Curie
- 2009 **M.Sc. : Mathematics, Vision, Machine Learning.** Major : machine learning.  
Ecole Normale Supérieure de Cachan. *Note : summa cum laude*  
**Master's degree : statistics and economics.** Major : statistics.  
Ecole Nationale de la statistique et de l'Administration Economique (ENSAE).
- 2007 **B.Sc. : applied mathematics, economics and finance.** Major : Probabilities.  
University Paris 1 Panthéon-Sorbonne, France. *Note : valedictorian, magna cum laude*

## Selected projects

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- 2012 **Gene regulatory network inference - Mines ParisTech, France**  
– *Developed a new method to learn the structure of a regulatory network.*  
– *Matlab implementation : TIGRESS package.*  
– *Ranked second out of 35 methods in DREAM5 Network Inference in silico challenge.*
- 2011 **Visit of Sandrine Dudoit's biostatistics lab - UC Berkeley, CA**  
– *Comparison of RNA-Seq and SNP data on lung cancer cell lines - Genentech Inc.*  
– *Multi-class prediction of cancer's origin site - Pathwork Diagnostics Inc.*
- 2011 **Comparison of feature selection methods for breast cancer outcome prediction - Mines ParisTech, France**  
– *Benchmark set up and Matlab implementation : FSBENCHMARK package.*  
– *Principal findings : 1) simpler methods work overall best 2) Random procedure returns decent results. 3) Ensemble methods do not lead to better signatures, in general. 4) Interpretability improved using prior knowledge.*
- 2006-2010 **Teaching Assistant - University Paris 1, Panthéon-Sorbonne, France**  
– *Taught statistics, probabilities and real analysis to undergraduate students.*  
– *Corrected exercises, prepared exams, graded papers, followed up projects.*  
– *Organized information meeting to help students find the right orientation.*

## Skills

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- **Statistics and Machine Learning** : prior knowledge-based modeling of high-dimensional structured problems, supervised and unsupervised learning, graphical models, ensemble and resampling methods, time series analysis, optimization.
- **Computer** : *platforms* : Mac OS X, Linux/Unix, Windows; *programmation* : Matlab, R, HTML, CSS; *other* : LateX, Subversion
- **Languages** : French (native speaker), English (fluent), German (good), Spanish (intermediate)
- **Personal** : very comfortable with oral presentations; seeking challenge, committed and persevering; integer and honest, easy acknowledgements of my mistakes.

## Personal Likes

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Singing/playing the piano, writing stories and songs, backpack traveling, answering questions on geeky forums, guiding people through Paris, debating social questions with people who do not agree...

## Appendix : publications and presentations

### Publications and technical reports

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D. Marbach, J.C. Costello, R. Kuffner, N. Vega, R.J. Prill, D.M. Camacho, K.R. Allison, **the DREAM5 Consortium**, M. Kellis, J.J. Collins, G. Stolovitzky, *Wisdom of crowds for robust gene network inference*, 2012, Nature Methods, doi :10.1038/nmeth.2016. [Link to paper](#).

**Haury A.-C.**, Mordelet F., Vera-Licona P., Vert J.-P., *TIGRESS : Trustful Inference of Gene REgulation using Stability Selection*, 2012, arXiv :1205.1181, currently peer-reviewed. [Link to paper](#).

**Haury A.-C.**, Gestraud P., Vert J.-P., *The influence of feature selection methods on the accuracy, stability and interpretability of molecular signatures*, 2012, PLoS ONE 6(12) : e28210. doi :10.1371/journal.pone.0028210. [Link to paper](#).

**Haury A.-C.**, Jacob L., Vert J.-P., *Improving stability and interpretability of gene expression signatures*, 2010, arXiv 1001.3109. [Link to paper](#).

### Peer-reviewed presentations

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- 2011    **TIGRESS : Trustful Inference of Gene REgulation using Stability Selection.**  
Joint work with Fantine Mordelet, Paola Vera-Licona and Jean-Philippe Vert.  
MLCB (NIPS workshop) 2011 , Granada, Spain, December 2011 . [Link to video](#)
- 2010    **The Influence of Feature Selection Methods on Accuracy, Stability and Interpretability of Molecular Signatures.**  
Joint work with Pierre Gestraud and Jean-Philippe Vert.  
MLSB 2010 (ICSB workshop), Edinburgh, Scotland, October 2010 . [Link to video](#)
- 2010    **Increasing stability and interpretability of gene expression signatures (prediction of breast cancer outcome)**  
Joint work with Laurent Jacob and Jean-Philippe Vert.  
SMPGD 2010, Marseille Luminy, France, January 2010