

**Toby Dylan Hocking** nationality: USA born: 17 March 1984  
email: toby.hocking@mail.mcgill.ca web: <https://github.com/tdhock>

## Education and work experience.

**2014–2015** post-doc in machine learning for epigenomics with Guillaume Bourque at McGill University, Montreal, Canada.

**2013** post-doc in theoretical machine learning with Masashi Sugiyama at Tokyo Institute of Technology, Japan.

**2012** PhD in machine learning for cancer genomics with Jean-Philippe Vert and Francis Bach in Paris, France.

**2009** Masters of statistics, internship with Mathieu Gautier and Jean-Louis Foulley, INRA, Université Paris 6.

**2007–2008** data visualization and statistical web database programming at Sangamo BioSciences, Richmond, California.

**2006** Bachelor in molecular and cell biology and statistics, thesis with Terry Speed, UC Berkeley.

## Selected first-author research publications.

- **Hocking TD**. A breakpoint detection error function for segmentation model selection and validation. arXiv:1509.00368.
- **Hocking TD** and Bourque G. PeakSegJoint: fast supervised peak detection via joint segmentation of multiple count data samples. Preprint arXiv:1506.01286.
- **Hocking TD**, et al. PeakSeg: constrained optimal segmentation and supervised penalty learning for peak detection in count data, ICML 2015.
- **Hocking TD**, et al. Animint: a Grammar for Interactive Animations. Invited session at Joint Statistical Meetings 2015.
- **Hocking TD**, Goerner-Potvin P, Morin A, Shao X, Bourque G. Visual annotations and a supervised learning approach for evaluating and calibrating CHIP-seq peak detectors. Preprint arXiv:1409.6209.
- **Hocking TD**, Spanurattana S, Sugiyama M. Support vector comparison machines. Preprint arXiv:1401.8008.
- **Hocking TD** et al. SegAnnDB: interactive Web-based genomic segmentation. *Bioinformatics* (2014) 30 (11): 1539-1546.
- **Hocking TD**, Rigai G, Bach F, Vert J-P. Learning sparse penalties for change-point detection using max-margin interval regression, ICML 2013.
- **Hocking TD**, Schleiermacher G, Janoueix-Lerosey I, Boeva V, Cappo J, Delattre O, Bach F, Vert J-P. Learning smoothing models of copy number profiles using breakpoint annotations. *BMC Bioinfo.* 2013, 14:164.
- **Hocking TD**, Wutzler T, Ponting K and Grosjean P. Sustainable, extensible documentation generation using inlinedocs. *Journal of Statistical Software*, 54(6), 1-20.
- Adding direct labels to plots, which won the **Best Student Poster** award at user! 2011.
- **Hocking TD**, Joulin A, Bach F, Vert J-P. Clusterpath: an Algorithm for Clustering using Convex Fusion Penalties, ICML 2011.

## Free/open-source software projects, teaching.

- Author of several free/open-source R/C/C++/Python/JavaScript packages for machine learning, data visualization, and statistical programming: sublogo, inlinedocs, directlabels, nicholsonppp, clusterpath, quadmod, bams, neuroblastoma, breakpointError, SegAnnot, SegAnnDB, rankSVMcompare, gganim, animint, requireGitHub, WeightedROC, plotly, revector, DiffPeaks, PeakError, PeakSegDP, PeakSegJoint, memtime, namedCapture.
- Teaching assistant for Machine Learning at Mines ParisTech, Spring 2011.
- Co-administrator for the R project's participation in the Google Summer of Code (R-GSOC) 2012–2015.
- Mentor in R-GSOC 2013–2015: my students Susan VanderPlas, Carson Sievert, Tony Tsai, Akash Tandon, and Ishmael Belghazi implemented R packages for data viz (animint), machine learning (bigoptim), and testing (Rperform).

## Language skills: English (native), French (fluent).

**Hobbies:** Playing saxophone and clarinet since 1994, bicycle enthusiast since 2007.