

# Bioinformatics Homework 3

## Type 1: Literature Project

### Sequence analysis and alignment

#### Assignment instructions

Choose **one** of the paper options posted on the course website. These papers extend or provide additional background on the course notes covering “sequence analysis and alignment”

- **Option 1:** [Strobl, Carolin, et al. "Conditional variable importance for random forests." \*BMC bioinformatics\* 9.1 \(2008\): 307.](#)
- **Option 2:** [Huynh-Thu, Vân Anh, et al. "Inferring regulatory networks from expression data using tree-based methods." \*PloS one\* 5.9 \(2010\): e12776.](#)
- **Option 3:** [Gasch, Audrey P., and Michael B. Eisen. "Exploring the conditional coregulation of yeast gene expression through fuzzy k-means clustering." \*Genome Biol\* 3.11 \(2002\): 1-22.](#)
- **Option 4:** [Barabási, Albert-László, Natali Gulbahce, and Joseph Loscalzo. "Network medicine: a network-based approach to human disease." \*Nature Reviews Genetics\* 12.1 \(2011\): 56-68.](#)
- **Option 5:** [Strobl, Carolin, et al. "Bias in random forest variable importance measures: Illustrations, sources and a solution." \*BMC bioinformatics\* 8.1 \(2007\): 25.](#)

Read the paper and summarize it. Clearly specify its objectives, summarize methods used or explained, and discuss its content, by looking into additional resources on the web.

**Do not copy the paper**, but show you have understood the main ideas of the paper and “discuss” the paper. Such a discussion could include thoughts on what was the key idea, strengths or weaknesses of the methods/experiments, comments on the writing, ways to extend the work, flaws in the argument/data/experiments, etc. Anything is fine, as long as it demonstrates some real thought. Structure your final report by using abstract, introduction, results and discussion and conclusion sections. Also do not forget to include references. You can choose any referencing style. Please submit the report before or on the November 4<sup>th</sup>.

All literature projects will be presented and discussed in the class of 8th December 2015. Hence, **make sure you prepare a 10-15 minutes presentation!**