Dr. Ferhat Ay
La Jolla Institute for Immunology

“Identifying distal enhancer-promoter interactions in human immune cells from proximity ligation data”

The focus of Dr. Ay’s work is to understand gene regulation in complex organisms and diseases by developing novel methods that leverage high-throughput genomics and epigenomics data. He develops computational methods that are based in statistics, machine learning, optimization and graph theory. He is particularly interested in the analysis and modeling of the 3D genome architecture from high-throughput chromatin conformation capture data to understand how do changes in this 3D architecture affect cellular outcome such as development, differentiation, gene expression and disease phenotypes. He is also interested in uncovering epigenetic mechanisms behind precise regulation of gene expression in the deadly malaria parasite Plasmodium falciparum during its sexual and asexual life cycles. He also has ongoing interests in systems level analysis and reconstruction of regulatory networks, inference of enhancer-promoter contacts, predictive models of gene expression and integration of chromatin conformation data sets with one-dimensional measurements such as histone modifications, nucleosome occupancy and DNA accessibility.

https://www.lji.org/faculty-research/labs/ay/#overview

Questions? Contact Brian Giebel at bgiebel@uw.edu or visit the Combi website at http://www.gs.washington.edu/news/combi.htm

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