BRIGHAM AND WOMEN'S HOSPITAL

HARVARD MEDICAL SCHOOL

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Department of Medicine
Channing Division of Network Medicine

Channing Network Science Seminar
January 22, 2016, 11am @ 5th floor conference room

Speaker: Benjamin J Hescott, Ph.D.
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CANDL - Coarsely Aligning Networks with Diffusion and Landmarks

Abstract: In this work we shift focus in the global network alignment problem, moving away from identifying local structural similarities, and focusing instead on finding coherent, functionally related groups of genes across species. We introduce a new solution, CANDL — Coarsely Aligning Networks with Diffusion and Landmarks. Key to this technique is a new method for embedding the graph into a continuous metric space. Unlike previous methods that seek to conserve local motifs, this technique identifies neighborhoods that are functionally similar. In the second part of the talk, we identify and quantify previously overlooked limitations of topological validation techniques for network alignment problem. We show that all current techniques for comparing the quality of aligners fall short and that functional techniques are required.

Bio: Benjamin Hescott is an Assistant Professor in the Department of Computer Science at Tufts University's School of Engineering. His research interests include computational complexity, approximation algorithms, and computational biology. He graduated from Boston University with a Ph.D. in computer science in 2008. He is the faculty supervisor for the student ACM chapter and serves as liaison to the New England Undergraduate Computer Science Symposium. He is member of the leadership team for ELA (Empowering Leadership Alliance) whose main purpose is encouraging, preparing, and retaining underrepresented minorities in computer science. He is the recipient of the 2011 IEEE Computer Society Computer Science and Engineering Undergraduate Teaching Award, the 2011 Lerman-Neubauer Prize for Outstanding Teaching and Advising, the 2012 Henry and Madeline Fischer Award (Engineering Teacher of the year award), the 2012 Lillian and Joseph Leibner Award for Excellence in Teaching and Advising of Students and the 2013 Tufts Graduate Student Council Award for Outstanding Faculty Contribution to Graduate Studies.

Hosted by Peter Castaldi

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