Sancar ADALI

sadali@gmail.com (410) 245-0354
2946 Keswick Rd. Apt.1
Baltimore, MD 21211

EDUCATION

- Johns Hopkins University, Baltimore, MD   Sept 2006 - Present
    Ph.D in Applied Mathematics and Statistics (Completed All requirements)
    Master of Science in Engineering   Sept 2006 - June 2008

- Brown University, Providence, RI   Sep 2003-Feb 2005
    Master of Science in Electrical Sciences and Computer Engineering
    Research Area: Computer Vision and Pattern Recognition

- Bogazici University, Istanbul, TURKEY   Sep 1999-Jun 2003
    Bachelor of Science in Electrical and Electronics Engineering   GPA : 3.65
    Area of Concentration: Signal Processing and Communications

PAPERS

- **Sancar Adali**, Carey E. Priebe, *Fidelity-Commensurability tradeoff in Joint Embedding of Disparate Dissimilarities,* Journal of Classification, in review. http://arxiv.org/abs/1306.1977
- **Sancar Adali**, Vince Lyzinski, Carey E. Priebe, *Joint Embedding Method for Generalized Seeded Graph Matching* , in prep.
- Donniell E. Fishkind, **Sancar Adali**, Carey E. Priebe, *Seeded Graph Matching,* Communications in Statistics - Simulation and Computation, in review. http://arxiv.org/abs/1209.0367
- Carey E. Priebe, David J. Marchette, Zhiliang Ma, **Sancar Adali,** *Manifold Matching: Joint Optimization of Fidelity and Commensurability* , Brazilian Journal of Probability and Statistics, Volume 27, Number 3 (2013), 377-400. http://arxiv.org/pdf/1112.5510.pdf

SKILLS

- Statistical Programming in R
- Statistical Machine Learning Theory and Methods : decision trees, support vector machines
- Dimensionality Reduction Methods: Multidimensional Scaling
- Learning with Structured data: Data in complex domains such as graphs, dissimilarity representation in Pattern Recognition

RESEARCH EXPERIENCE

XDATA Summer Workshop   Arlington, VA   June 2013-Aug 2013

Participant in XSW 2013, a two-month workshop for XDATA. XDATA is a research program that seeks to develop tools for government applications of big data.
The focus of the workshop was developing an open-source analytics/visualization software stack with the goal of creating solutions for the challenge problems.
Responsibilities:
- Developing statistical inference tools for static and dynamic graphs in R, and maintained the open-source R packages for the Johns Hopkins Team
- Devising mathematical solutions to tractable versions of the challenge problems
- Coordinating the team efforts for software development and exploratory analysis of the challenge datasets

Johns Hopkins University   Baltimore, MD   Sept 2006- Present

Statistical Learning and Graph Theory Research:
- Investigation of Joint Optimization of Fidelity and Commensurability (JOFC) approach to Data Fusion (specifically for Manifold Matching problems). Applied various approaches such as Canonical Correlational Analysis to solve the match detection and assignment problem of matched measurements/signals.
- Implementation and testing of an efficient optimization algorithm, Fast Approximate Quadratic Programming (FAQ), for Graph Matching with known correspondences.

Machine Learning and Statistics Research:
As a researcher in Cardiovascular Research Grid (CVRG) Project ,
- using statistical methods to discover biomarkers for predicting sudden cardiac death in a medical study
- implementation Machine Learning software tools to identify patients with high risk of heart arrhythmia and/or sudden cardiac death using data of different modalities (SNP, ECG, imaging, clinical)
- using Survival Analysis methods to extract quantitative information from censored data.

Bioinformatics Research:
As part of a biomarker discovery study,
- statistical analysis of Mass Spectrometry data
- writing code for the significance testing of differential abundance levels for peptides with post-translational modifications based on data from MS/MS analysis.

Brown University   Providence, RI   Sept 2003- Jan 2005

Computer Vision and Machine Learning research:
For a practical Multiview Geometry problem,
- exploring problems of robust Homography Estimation between frontal images of a moving vehicle

COMPUTER EXPERIENCE

- Extensive programming experience in R (6+ years),
- Programming experience in MATLAB, C, C++(3 years), Python, Java and VXL(an open-source computer vision library in C++)
- Development experience in Computer Graphics, using tools such as OpenGL
- Development of a Computational Geometry library based on generic programming
- Proficient in database technologies such as SQL
- Proficient in various academic and development software tools for document typesetting (Latex), version control (SVN, Git), machine learning (WEKA)
- Working knowledge of Hadoop and MapReduce approach to solving big data problems

TEACHING EXPERIENCE

- Workshop for design of the new case-study focused introductory statistics course ("*Statistics Through Case Study*") in Department of Applied Mathematics and Statistics of Johns Hopkins University:
Responsible for introducing R to workshop participants and writing the R tutorial for the course along with producing one of the case study modules.
- Teaching Assistant for "*Computational Molecular Medicine*", a course for biological and medical applications of statistical learning methodology :
Responsible for preparing questions, clarifying concepts to students, helping students with programming issues.

RESEARCH INTERESTS

- Statistical applications in Bioinformatics and Computational Biology
- Machine Learning, Pattern Recognition Problems such as Manifold Alignment, Data Fusion and the missing data problem

WORK EXPERIENCE

- Siemens Corporate Research, Princeton, NJ   Apr 2005-Apr 2006
        Temporary Technical Employee
Designed and developed a C++ library for a CAD software package for designing hearing aids, practiced generic programming techniques

AWARDS AND HONORS

- Graduated with High Honors from Bogazici University (Istanbul, TURKEY)
- Recipient of Acheson J. Duncan award for the Advancement of Research in Statistics

RELEVANT COURSEWORK

- Foundations of Computational Biology & Bioinformatics II :
Developed software for the prediction of deleterious point mutations in phosphoinositide-3-kinase encoding gene (PIK3CA) using Machine Learning tools for Semisupervised Learning and One-class Learning.

- Topics In Bioinformatics:
Discussed and presented recent articles in the field of Bioinformatics

- Bioinformatics and Statistical Genetics:
Reviewed and analyzed statistical methods for inferring knowledge from genetic and phenotype data

- Genomics for Public Health:
Overview of various -omics fields covering various topics such as wet lab methods, usage of online databases and practical public health applications

REFERENCES

Available on request

LANGUAGES

English - Fluent
Turkish - Native