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Ehsan Tabari

Summary

I have extensive training in statistical data modeling and analysis, parallel computing algorithms and techniques, and large scale data integration and interpretation. Through more than five years of academic research on top of more than 17 years of working as a professional software engineer, I have gained invaluable experiences in leading teams of researchers and innovators and communicating between computational and biological areas.

My main field of research is understanding gene transcription and regulation using NGS transcriptomic data and combining it with proteomics to build stronger statistical models that can predict cell behavior under environmental changes.

Skills

High throughput sequencing, gene regulation, comparative genomics, RNA-Seq, CHIP-Seq.
Algorithm/pipeline design and implementation, software programming, web applications:

Python, Perl, Java, C++, C#.

Statistical analysis and modeling, R.

Database Management Systems, MS SQL Server, MySQL.

Parallel algorithms, distributed programming, High Performance Computing, cloud computing.

Education

Ph.D. Bioinformatics and Computational Biology

degree in 2016

University of North Carolina at Charlotte

For my dissertation, I integrated genomic, transcriptomic and proteomic to investigate gene regulation mechanisms in bacteria.

M.Sc. Computer Science

2006

University of Tehran

Focus: Theory of Computation, Parallel algorithms

For my thesis, I introduced a new algorithm to generate trees with a specific number of nodes and leaves in A-Order in $O(n)$.

B.Sc. Computer Science

2003

Shahid Beheshti University, Tehran

Focus: Software Engineering

Experience

Research Assistant

Jan 2009 to Oct 2016

UNC Charlotte

Investigated the pervasiveness of antisense RNA in bacteria and its role in gene regulating by integrating a huge quantity of RNASeq and Mass Spectrometry data for E. coli at multiple time points under 5 different growth conditions.

Adapted a statistical model to investigate alternative and dynamic operon transcriptions, in E. coli at multiple time points under three different stress conditions.

Performed a large scale operon prediction for all published RefSeq bacterial genomes using cloud computing.

Software Developer Intern

Apr to Aug 2010

NC Research Campus

Worked on INTEGRATED GENOME BROWSER (IGB). IGB is a standalone Java application capable of displaying and analyzing large biological data for which, I developed user interface elements.

Lecturer

Aug 2007 to Dec 2008

University of Tehran

Taught a variety of computer programming courses including undergraduate courses in the department of Computer Science as well as graduate courses for the department of Biotechnology.

Software Architect

Aug 2004 to Dec 2007

Daystar ITC

Coded the backend, hired and managed a team to build the web front-ends to create an online market that connected custom rug makers to customers.

Designed database for CARVER, a comprehensive dentist assistant software package. Daystar's CARVER is a successful product with a healthy user base.

Software Developer

Aug 1998 to 2004

Behin System Co.

Hired and directed a team of web developers that took on multiple websites and web application through years. Most notably, my team deployed the main website of the Ministry of Economic Affairs and Finances.

Worked in a team developing BEHPEDIA, a general encyclopedia package.

Publications

Antisense transcription and its roles in response to environmental changes in E. coli K12.

BMC Genomics, 2016

first author (to appear)

PorthoMCL: Parallel orthology prediction using MCL for the realm of massive genome availability.

Big Data Analytics, 2016

first author

De novo prediction of cis-regulatory elements and modules through integrative analysis of a large number of ChIP datasets.

BMC Genomics, 2014

ArrayInitiative - a tool that simplifies creating custom Affymetrix CDFs.

BMC Informatics, 2011

A new algorithm for generation of different types of RNA.

International Journal of Computer Mathematics, 2008

first author

Miscellaneous

ISMB Presenter	2014 <i>and</i> 16
Cloud Futures 2012 Speaker	2012
Developed a couple of Windows Phone apps	2011
Robocup Rescue Simulation League	2004
RoboCup Soccer Simulation League	2003
Developed Symbian S60 mobile apps	2002