

Ankit Malhotra

Dept of Biochemistry and Molecular Genetics, University of Virginia
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EDUCATION

- Jan'07 – May'09 Dept. of Biochemistry and Molecular Genetics, University of Virginia, USA
Ph.D. Candidate, expected graduation May 2009
Title: “*A Computational Study of Chromosome Structure and Instability*”
Advisor: Dr. Anindya Dutta
Committee Members: Dr. Amy Bouton, Dr. Stefan Bekiranov, Dr. Ira Hall
- Aug'03- Jan'07 Dept. of Computer Science, University of Virginia, USA,
Master of Computer Science, G.P.A.: 3.6/4.0
Title: “*Computational Infrastructure for High Throughput RNAi screening experiments*”
Advisor(s): Dr. Gabriel Robins, Dr. Anindya Dutta
Committee Members: Dr. Worthy Martin
- Jul'99- May'03 Dept. of Computer Science, Hans Raj College, University of Delhi, India
Bachelor of Information Science, Class Rank: 2nd
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RESEARCH INTERESTS

Bioinformatics, Computational Biology, High Throughput Sequencing, Microarray Analysis, High Performance Algorithms, Genomics, Sequence Analysis, Statistics, Artificial Intelligence, Operating Systems

PUBLICATIONS

Lee YS, **Malhotra A**, Dutta A, “*A novel class of small RNAs, tRNA-derived RNA fragments (tRFs), is highly expressed in proliferating cells and required for cell proliferation*”, Communicated to Genes and Development

Shibata Y*, **Malhotra A***, Dutta A, “*Yeast genome analysis by ChromPET technology identifies sites of translocation and several sites of Ty element insertion*”, Communicated to Genome Research
(* co-first authors)

Lee YS, **Malhotra A**, Sun D, Kim HK, Matecic M, Evans C, Dutta A, “*miRNAs in the androgen-independence and androgen regulation of prostate epithelial cell lines*”, Communicated to RNA

Karnani N, Taylor CM, **Malhotra A**, Dutta A, “*High-throughput mapping of nascent DNA to identify efficient origins of DNA replication in human chromosomes*”, Communicated to Genome Research

Dutta A, Karnani N, **Malhotra A**, Robins G, Taylor CM. “*Extraction of Human DNA Replication Timing Patterns from Discrete Microarray Data*” 3rd IAPR International Conference on Pattern Recognition in Bioinformatics (PRIB 2008), Melbourne, Australia, October 2008.

Karnani N, Taylor CM, **Malhotra A**, Dutta A. “*Pan-s replication patterns and chromosomal domains defined by genome-tiling arrays of ENCODE genomic areas*”. Genome Res. 2007 Jun;17(6):865-76.

The ENCODE consortium. “*Identification and analysis of functional elements in 1% of the human genome by the ENCODE pilot project*”, Nature. 2007 Jun 14; 447(7146):799-816

(Article was featured on the cover page)

(I was one of the two bioinformaticians from UVA)

Kim HK, Lee YS, Sivaprasad U, **Malhotra A**, Dutta A, “*Muscle-specific microRNA miR-206 promotes muscle differentiation*”, Journal of Cell Biology, 2006; 174, 677-687

(Article was featured on the cover page)

Machida Y, Chen Y, **Malhotra A**, Machida Y, Dutta A, “*Targeted Comparative RNAi (TARCOR) Analysis Reveals Differential Requirement of Genes Essential for Cell Proliferation*”, Mol Biol Cell. 2006 Nov;17(11):4837-45

Malhotra A, Kaur H, Bedi P, “*Fuzzy Dimension to Databases*”, 37th National Convention of Computer Society of India, Bangalore, India, 2002, Nov

PATENTS

2008 U.S. Provisional Patent (#61/099,943)
“*Anchored Chromperts for Identifying Chromosomal Translocations n Disease*”
Inventors: Dr. Anindya Dutta, **Ankit Malhotra**, Yoshiyuki Shibata

2008 U.S. Provisional Patent (#61/100,048)
“*Yeast Genome Analysis by ChromPET Technology Identifies Sites of Translocation and Several Sites of Ty Element Insertion*”
Inventors: Dr. Anindya Dutta, **Ankit Malhotra**, Yoshiyuki Shibata

INVITED TALK

Dec’08 “*Yeast genome analysis by ChromPET technology identifies sites of translocation and several sites of Ty element insertion*”, Annual Structural, Computational Biology and Biophysics (SCBB’08) retreat, University of Virginia.

POSTER PRESENTATIONS

July’06 **Malhotra A**, Taylor CM, Karnani N, Boyle P, Dutta A, “*Transition Zones in Replication Timing predict Chromosomal Domains*”, 3rd ENCODE Consortium Meeting

Sept’05 Machida Y, Chen Y, **Malhotra A**, Machida Y, Dutta A, “*Targeted Comparative RNAi (TARCOR) Analysis of essential genes in human cell lines*”, RNAi-2005

Jul’05 Taylor CM, **Malhotra A**, Karnani N, Dutta A, “*Computational Analysis of DNA Replication Data*”, 2nd ENCODE Consortium Meeting

- Jul'05 Karnani N, Taylor CM, **Malhotra A**, Dutta A, “*Replication Profiling of ENCODE regions in HeLa*”, 2nd ENCODE Consortium Meeting
- Oct'04 Taylor CM, **Malhotra A**, Jeon Y, Bekiranov S, Karnani N, Kapranov P, Ghosh S, Gingeras TR, Dutta A, Robins G, “*Temporal Profile of replication of human chromosomes*”, 7th Annual Conference on Computational Genomics
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RESEARCH EXPERIENCE

- 2003 - Present **Graduate Research Assistant**, Dr. Anindya Dutta, University of Virginia
Identification of chromosomal rearrangements in cancer using deep sequencing
Analysis of DNA Replication dynamics in Humans
Functional Profiling of miRNA's
Computational Infrastructure for High Throughput TARCOR Screens
- 2005 **Graduate Project**, Dr. Jae K Lee, University of Virginia
Combinatorial Regulation by miRNA's
- 2004 **Graduate Project**, Dr. Andrew Grimshaw, University of Virginia
A Study of Parallel Sockets on TCP Performance
- 2004 **Graduate Project**, Dr. Kevin Skadron, Dr. Dave Luebke, University of Virginia
Exploring Specialization for Rasterization Hardware
- 2003 **Graduate Project**, Dr. John A. Stankovic, University of Virginia
A Divide and Conquer Approach for Localization in Wireless Sensor Networks
- 2003 **Research Assistant**, Dr. P.R. Panda, Indian Institute of Technology, Delhi
Performance Estimation through Floorplan Generation for VLSI Circuits
- 2002 - 2003 **Undergraduate Research**, Dr. Harmeet Kaur, University of Delhi
Intelligent Agents and Electronic Marketplace
Fuzzified Relational Database Model
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WORK EXPERIENCE

- 2004 **Graduate Teaching Assistant**, Dept of Computer Science, University of Virginia
CS-654, Computer Architecture
- 2003 **Graduate Teaching Assistant**, Dept of Computer Science, University of Virginia
CS-101, Introduction to computing
- 2001 **Intern**, Videsh Sanchar Nigam Limited (VSNL), New Delhi, India
VSNL was India's sole carrier for overseas telephony till 2002, and it provides bandwidth for internet service providers
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COMPUTER SKILLS

Programming Languages Java, C, C++, Perl, Assembly Language

Statistical Languages	R, Minitab
Bioinformatics Software	BLAST, Maq, BLAT, MEME, YMF, Clover, Clustal package, Multalign NovoAlign, BioConductor
Software Packages	Jbuilder, JDBC, MPI, Apache, Microsoft Office
Scripting Languages	HTML, DHTML, JavaScript, CGI, Scripting under UNIX
Database Systems	MySQL, Microsoft Access, Oracle, PL/SQL
Operating Systems	Windows 95/98/2000/XP/Vista, Mac OS X, Linux, SunOS, Solaris, Windows 3.x, DOS

HONORS AND ACCOMPLISHMENTS

- 1997 **Meritorious Scholarship**, All India Talent Scholarship Award Examination, organized by Children's Education Trust of India.
- 1997 **Meritorious Scholarship** for standing among the top 0.1% of appeared students in Mathematics in the All India Senior Secondary Examination (A.I.S.S.E.), awarded by the Central Board of Secondary Education
- 1996 **Meritorious Certificate**, University of New South Wales, Talent Search for Science & Maths (Placed 99th and 78th percentile all India respectively)
- 1996 **Meritorious Certificate** in Maths Olympiad.
- 1996 **18th rank**, Delhi Science Open Merit test, organized by Delhi State Science Teachers Forum
- 1991 **Meritorious Scholarship**, All India Talent Scholarship Award Examination, organized by Children's Education Trust of India.
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BIOGRAPHICAL INFORMATION

Citizen of India, currently holding F1 visa in US

REFERENCES

Available on request.
