

Joshua T. Burdick

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Genomics and Computational Biology

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Education

B.S. Computer Science, Swarthmore College, 1995. *also* B.A. Music.

Graduate studies, Computer Science, University of Maryland, College Park, 1995–1997.

M.S.E. Computer and Information Science, University of Pennsylvania, 2002.

Ph.D. Genomics and Computational Biology, University of Pennsylvania, *expected* 2014.

Committee: Russ Carstens, Shane Jensen, and Junhyong Kim.

Employment

University of Maryland, College Park, Department of Computer Science

Teaching Assistant, Introduction to Programming (C and Pascal), 1995–1996.

Teaching Assistant, Introduction to Programming Languages, Alex Dekhtyar, Summer 1996.

Teaching Assistant, Introduction to Algorithms, Dana Nau, Spring 1997.

The Franklin Institute, Philadelphia, PA

Java programmer, April 1998 – March 1999. Assisted with Java and VRML development for a multi-user virtual training environment. Used Java RMI to implement a client-server message-passing protocol.

Children's Hospital of Philadelphia / University of Pennsylvania

Research Assistant, laboratory of Vivian Cheung, 1999–2007. Maintained local copies of several genomic databases using Perl and SQL. Analyzed and visualized experiment results using SQL, Perl CGI, Java, C++, and R. Located locally-sequenced DNA in public databases using BLAT and BLAST.

Research

Publications

Burdick JT, Chen WM, Abecasis GR and Cheung VG (2006). In silico method for inferring genotypes in pedigrees. *Nat Genet* 38:1002-4.

Smirnov DA, Burdick JT, Morley M, Cheung VG (2004). Method for manufacturing whole-genome microarrays by rolling circle amplification. *Genes, Chromosomes & Cancer* 40:72-77.

Watts JA, Morley M, Burdick JT, Fiori JL, Ewens WJ, Spielman RS, Cheung VG (2001). Gene expression phenotype in heterozygous carriers of ataxia telangiectasia. *Amer. J. Hum. Genet.* 71: 791-800.

Morley M, Arcaro M, Burdick J, Yonescu R, Reid T, Kirsch IR, Cheung VG (2001). GenMapDB: a database of mapped human BAC clones. *Nucleic Acids Research* 29(1): 144-147.

Working Papers

Gapped RNA-Seq alignment using Burrows-Wheeler indexes.

Finding triangles in 6-vertex graphs requires 21 NAND gates. Available online at

<http://www.cs.umd.edu/~gasarch/BLOGPAPERS/burdick1.pdf> (part 1) and

<http://www.cs.umd.edu/~gasarch/BLOGPAPERS/burdick2.pdf> (part 2).

Scientific Software

Genotype inference: a C++ program for inferring genotypes in pedigrees (2006).

Last updated: May 26, 2010