Christopher Dwan chris@dwan.org

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Employment

2000 – Present: Bioinformatic Programmer

Center for Computational Genomics and Bioinformatics, University of Minnesota. Minneapolis, MN

- Developed and maintained a high throughput sequence annotation system supporting preliminary analysis of more than a million expressed sequence tags per year.
- Extended the EnsEMBL genome annotation pipeline to run on a computational grid comprised of more than 250 processors distributed across three campuses, four administrative domains, and two states.
- Designed and built a 16 node Linux cluster. Augmented the cluster using opportunistic computing on Solaris, Linux, and OS X workstations. Created a metascheduling application to integrate local and offsite queues.
- Helped to maintain a computing infrastructure supporting over 1,400 users. Unique features of this environment include: two hardware accelerated systems from TimeLogic; a DEC ES40 Alphaserver; a small Linux cluster; Linux, Solaris, and Apple workstations; and more than 5 TB of online storage.

1996 – 2000: Research Engineer

Veridian Systems. Ann Arbor, MI

- Developed a neural net based vehicle detection and identification system
- Developed Bayesian "sensor fusion" algorithms for combining readings from remote sensors onto a common target model for identification.
- Created portable software libraries for image processing and vehicle identification.
- Two onsite rotations at the Army Research Lab in Adelphi, MD to integrate and test software developed.

1995 – 1996: Systems Administrator

Computer Aided Engineering Network. University of Michigan. Ann Arbor MI.

- Unix administration tasks including operating system upgrades, backups, and scripting.

Education

Continuing:	Graduate courses in Biology.	University of Minnesota.	Minneapolis, MN
2000:	MS, Computer Science.	The University of Michigan.	Ann Arbor, MI
1996:	BS, Computer Science.	The University of Michigan.	Ann Arbor, MI

Skills

- Strong written and oral communication skills. Experience in interdisciplinary collaboration and the interface between high performance computing and the life sciences.
- International lecturer and consultant on cluster and grid computing in the life sciences.
- Experienced software developer. Expert in C, C++, PERL, Tcl-Tk, as well as markup and database query languages (SQL, HTML, XML).
- Experience with open source applications for genomics and bioinformatics including BioPerl, EnsEMBL, and others.
- Graduate coursework in the life sciences including Genetics, Plant and Microbial Genomics, and Algorithms for Bioinformatics.

Publications

"Genome Sequence Survey Identifies Unique Sequences and Key Virulence Genes with Unusual Rates of Amino Acid Substitution in Bovine Staphylococcus aureus." Lisa Herron, Rajit Chakravarty, Christopher Dwan, J. Ross Fitzgerald, James M. Musser, Ernest Retzel, Vivek Kapur. Infection and Immunity, July 2002

Non life sciences publications available on request.

Tutorials

- "BioPerl." 1/2 day. The University of Minnesota. June 2003
- "Bioinformatics for Computer Professionals." 1/2 day IEEE Conference on High Performance Distributed Computing (HPDC-11), Edinborough, Scotland. August 2002

Conference Presentations and Posters

- "Bioinformatics Workflows: From the Workstation to The Grid." ClusterWorld Expo. April, 2004
- "How Not to Use BLAST." Presentation at the 2nd O'Reilly Bioinformatics Conference. February, 2003.
- "Speedup at what cost?" and "A High Throughput Environment for Computational Genomics." Presentations at the 1st O'Reilly Bioinformatics Conference. February, 2002
- "Applying Grid Technologies to Bioinformatics." Poster at the IEEE Conference on High Performance Distributed Computing (HPDC-10). August, 2001.
- "Integrated Data Visualization and Exploration of Genomic Data." Poster at Plant and Animal Genome IX Conference. January 2001.
- "Bioinformatics." Presentation at Fermi National Accelerator Laboratory's Large Scale Cluster Computing Workshop, May 22-25, 2001

Collaborations and Affiliations

- Conference Organizer for the 2004 "Bioclusters" track at Bio-IT World.
- Consultant. Scalable Informatics LLC, 2003 – present