

The Brassica/Arabidopsis Comparative Genomics Browser; A Novel Approach

Christopher T. Lewis

Univ. of Saskatchewan, Canada

SVG has enabled a visually appealing, browser-based application for the visual display of our 70,000 *Brassica napus* ESTs relative to *Arabidopsis thaliana*. The client side of this browser is based on our custom GUI library (CGUI) which uses Scalable Vector Graphics (SVG), a new web graphics standard, to provide windowing functionality inside a web browser. This windowing functionality, combined with asynchronous data retrieval and client side rendering overcomes two of the key drawbacks of current web based browsers: fixed displays and frequent page reloads.

The end result is a more intuitive and enjoyable browsing experience. The next release of the browser will allow users to input novel sequences and view them relative to homologous regions in *Arabidopsis*. This will be accomplished via an on-the-fly BLAST from a webpage. The browser is accessible online at the Brassica / Arabidopsis Genomics Initiative (<http://brassica.agr.gc.ca>). People wishing to inquire about the browser should contact LewisCT@agr.gc.ca.

CHRISTOPHER T LEWIS

107 Science Place, Saskatoon, SK, Canada

Telephone: 01-306-956-7693

Fax: 01-306-956-7247

Email: LewisCT@agr.gc.ca

Nationality: Canadian

AFFILIATION

- Bioinformatics Biologist for the Molecular Genetics Section at the Saskatoon Research Centre of Agriculture and Agri-food Canada.
- Graduate Student (Computer Science) at the University of Saskatchewan.
- Member of the University of Saskatchewan Bioinformatics Research Laboratory (BIRL).

EDUCATION

University of Saskatchewan
Saskatoon, Saskatchewan

- Bachelor of Science (B.Sc. Honors) in Computer Science with Internship 1996 - 2001
 - Graduate Program (M.Sc.) in Computer Science 2002 - Present
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Research Experience

Conference Proceedings

- **BioViz: Genome Viewer**

Development of an SVG GUI for the visualization of genome data

Christopher T Lewis, Steve Karcz, Andrew Sharpe, Isobel A.P. Parkin

SVG Open 2002

Presentations

- **SVG Open 2003 - Vancouver, B.C., Can.**

o Organized a Scalable Vector Graphics (SVG) Graphical User Interface (GUI) workshop.

o Presented the goals of the SVG Programmers Application Resource Kit (SPARK).

- **PAG XI (2003) - San Diego, Ca., U.S.A.**

o Demonstrated the functionality of the Brassica / Arabidopsis Comparative Genome Browser at Plant and Animal Genome (PAG) XI. The browser is currently accessible online at <http://brassica.agr.gc.ca>.

- **SVG Open 2002 - Zurich, Switzerland.**

- **CASCON 2002 - Toronto, Ont., Ca.**

o Development of the genome browser resulted in the creation of an open source SVG GUI toolkit. This toolkit was described at SVG Open 2002, and presented at CASCON 2002.

Projects

- **SVG Programmers Application Resource Kit (SPARK)**

o Presentation of the SVG GUI toolkit at the SVG Open and CASCON conferences attracted interest from SchemaSoft - a Vancouver based company involved in SVG standards. This led to the formation of the SPARK project to promote open standards for SVG GUI development.

Posters

- **ISMB 2003 - Brisbane, Australia.**

o Presented a poster describing cSAGE, software for the Serial Analysis of Gene Expression (SAGE), and its application to ongoing research at the Saskatoon Research Center.

o Presented a poster describing the Brassica / Arabidopsis Comparative Genome Browser.

WORK EXPERIENCE

Agriculture and Agri-food Canada 2001 - present Saskatoon, Saskatchewan

Bioinformatics Biologist - Molecular Genetics Section

- Creating tools to visualize genomics data
- Creating tools for the Serial Analysis of Gene Expression in *A. thaliana*
- Developing methods for alternate splice analysis of *A. thaliana*
- Creating databases for storage of new BAC library
- Supervising

Nortel Networks

1999 - 2000

Ottawa, Ontario

Software Engineering Intern

- Member of the optical networking division
- Experience in numerous functional areas including: Software Configuration Upgrade and Download (SCUD), Fault Location and Alarm Reporting Engine (FLARe), Hardware Software Interface (HSI), Transport Control System (TCS) Framework, and Card Configuration and Test (CCT)
- Responsible for designing, implementing and testing software features, and for resolving service requests
- Provided mentoring for new employee and other interns/students

International Road Dynamics

1998 - 1999

Saskatoon, Saskatchewan

Junior Programmer

- Maintenance and testing of a real-time transit dispatching and scheduling system (VB System, MS-SQL Database)
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