

# James "Augie" Hill

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## Education

**University of Michigan:** Ann Arbor, MI September, 2010 - April, 2012  
M.S.E., Computer Science (Intelligent Systems); Graduate Certificate, Complex Systems GPA: 8.214 / 9.0

**Southern Methodist University:** Dallas, TX August, 2003 - December, 2006  
B.S., Computer Engineering (Software); Minor in Mathematics GPA: 3.68 / 4.0  
Continued ice dance training and competition through January, 2006.

## Projects

### Peer-to-Peer Tangible Goods Sharing Mechanism Design

December, 2010 - April, 2011; September, 2011 - Present

Solo project under the direction of Dr. Michael Wellman motivated by the generally inefficient allocation of tangible goods that have a cyclic or one-time utility. Design and analysis by decision and simulation-based game theoretic analysis of an economic model with the goal of efficiently sharing goods that display such properties.

### Structured Data Identification From Human-Formatted Spreadsheet Documents Using Machine Learning

October 2010 - December, 2010

Solo project under the direction of Dr. Michael Cafarella motivated by the tendency for non-computer scientists to treat spreadsheets as databases with the assumption that they would be trivial to analyze. By including titles, footnotes, spacing, and indentation in their documents, users unknowingly make the job of automatic analysis difficult for computer scientists. Achieved 90% accurate classification using 200 self-annotated spreadsheets, half from the 2010 U.S. Census and half from the EUSES Spreadsheet Corpus collected through Google searches.

## Skills

**Languages** Java, Python, SQL, PHP, C++, C, Assembly

**Web** HTML, CSS, JavaScript, JSP, AJAX techniques, PHP

**GUI** Java Swing, OpenGL

**Software** UNIX: Ubuntu, Mac OS X; Windows; Netbeans IDE; MySQL; MongoDB; Subversion; Git; Perforce; Apache Tomcat; Django; WEKA; LaTeX

**Other** RDB Schema Design, Ant, JUnit, JavaDocs, Java WebStart, J2ME, DNS Management, TCP/IP Network Programming, SSL, Semantic Interoperability (caBIG), Machine Learning, Distributed Systems, Game Theory, Mechanism Design

**Hardware** Server/Desktop/Laptop specification, assembly and maintenance; Arduino

## Work Experience

**Google, PSO, Business Intelligence:** Mountain View, CA May, 2011 - August, 2011

*Associate Technology Manager Intern*

Helped to develop a tool named Inventory Planner, which aggregates and analyzes traffic and revenue data by domain, the primary purpose of which is to support the Sales team's objective of partner and advertiser lead generation and upsell. Given a set of domains labeled by the Sales team according to a new taxonomy, designed and partially developed a method of automatically applying those labels to all domains.

**University of Michigan, Proteome Research Lab:** Ann Arbor, MI February, 2007 - October, 2010

*Applications Programmer, Intermediate*

Worked in a very small group (TrancheProject.org) to develop tools for use by the global proteomics community. The objective of the team was to aid in the storage and dissemination of scientific data amongst researchers. The primary software package is Tranche, a free and open source file storage and dissemination system that is decentralized, scalable, secure, and accountable. A secondary software package is a science community web site that provides a web portal to the Tranche repository for proteomics researchers (ProteomeCommons.org).

Tasks:

- Work independently and with a group to determine software requirements and implemented those plans
- Develop, test, and document the Tranche Distributed Repository and Proteome Commons
- Maintain a network of web and storage servers for the Proteome Commons Tranche Repository
- Develop a comprehensive Java Swing user interface for interaction with a Tranche Repository
- Contribute to the grant proposal processes

## Major accomplishments:

- Developed a set of Java Swing-based graphical user interfaces for the Tranche repository.
- Created a software module and additional code in the Proteome Commons IO-Framework that interfaces with the Tranche repository to reformat FASTA files.
- Made the repository code generic and easily configurable, making the code more reusable.
- Developed batch methods for sending and receiving many small transactions to improve performance.
- Set up and maintained an Apple XServe web server running Tomcat, SSL, SVN, and MySQL for use by multiple web sites developed by the labs.
- Recreated Proteome Commons as a “science community” using principles of Web 2.0 social networking with Tranche as the data-sharing backbone.
- Lead the design and creation of the Tranche Annotations and its integration into Proteome Commons.
- Integrated the Proteome Commons Tranche Annotations database into the Cancer Biomedical Informatics Grid (caBIG) to allow for increased exposure of data sets stored on the Proteome Commons Tranche Distributed Repository.

## Freelance Developer

January, 2003 – Present

Develop web, software, and hardware applications for fun, money, and education. A portfolio is on [augiehill.com](http://augiehill.com).

## Publications

**(Not Yet Submitted)** Hill, James A. E-Commerce Model For Peer-to-Peer Tangible Goods Rental.

**(Not Yet Submitted)** Hill, James A. Structured Data in Spreadsheet Documents.

Hill, James A.; Smith, Bryan E.; Papoulias, Panagiotis G.; Andrews, Philip C. ProteomeCommons.org Collaborative Annotation and Project Management Resource Integrated With the Tranche Repository. *Journal of Proteome Research*. 2010, 9(6), 2809-2811.

Smith, Bryan; Hill, James; Gjukich, Mark; Andrews, Philip. Tranche Distributed Repository and ProteomeCommons.org. Chapter from *Data Mining in Proteomics: Methods in Molecular Biology*. Humana Press, 2010.

Falkner, Jayson A.; Hill, James A.; Andrews, Philip C. Proteomics FASTA Archive and Reference Resource. *Proteomics*. 2008, 8(9), 1756-1757.

## Presentations

Hill, J.A.; Smith, B.E.; Gjukich, M.; Andrews, P.C. (2009, September). ProteomeCommons.org Annotations and Project Management Resource. Poster presented at the 8<sup>th</sup> World Congress of the Human Proteome Organization. Toronto, Ontario, Canada.

Smith, B.; Hill, J.; Gjukich, M.; Andrews, P. (2009, September). Recent and Upcoming Developments in the Tranche Distributed Data Repository. Poster presented at the 8<sup>th</sup> World Congress of the Human Proteome Organization. Toronto, Ontario, Canada.

Hill, James; Smith, Bryan; Gjukich, Mark; Papoulias, Panagiotis G.; Falkner, Jayson; Andrews, Philip. (2009, June). ProteomeCommons.org Annotations and Project Management Resource. Poster presented at the 57<sup>th</sup> American Society for Mass Spectrometry Conference on Mass Spectrometry and Allied Topics. Philadelphia, Pennsylvania.

## References

### Dr. Michael Wellman

Research Advisor, E-commerce Professor

Professor, CSE Department, University of Michigan  
[wellman@umich.edu](mailto:wellman@umich.edu)

### Dr. Philip Andrews

Director of the University of Michigan's Proteome Research Lab

Professor, Biological Chemistry Department, University of Michigan  
[andrewsp@umich.edu](mailto:andrewsp@umich.edu)

### Dr. Jayson Falkner

Manager in Michigan's Proteome Research Lab

[jfalkner@gmail.com](mailto:jfalkner@gmail.com)

## Activities / Interests

### Competitive Ice Dancer

9-time international competitor, 10-time national competitor, 3-time national medalist  
Year-round training regimen consisted of between 15 and 40 hours per week

1997-2006, 2007-2008