

# Curran Kelleher

curran.kelleher@gmail.com

<http://github.com/curran/portfolio>

774 437 9956

## EDUCATION

**Ph. D. candidate in Computer Science**, expected graduation July 2014

University of Massachusetts Lowell, MA

**Master of Science in Computer Science**, GPA 3.74

University of Massachusetts Lowell, MA (December 2012)

**Bachelor of Science in Computer Science with Bioinformatics**, GPA 3.38

Junior Year Study Abroad at Technische Universität Darmstadt, Germany

University of Massachusetts Lowell, MA (December 2010)

## TECHNOLOGY SKILLS

JavaScript, CoffeeScript, HTML5 Graphics (D3.js, Canvas, WebGL), Node.js, MongoDB, WebSockets, Java, Groovy (Grails), Clojure, Unix shell scripting, Python, C#, C++, C, CUDA, SQL, SPARQL. Strongly prefer Linux based development, avid Vim user.

## SOFTWARE ENGINEERING AND RESEARCH EXPERIENCE

### HTML5 Data Visualization Engineer

Rapid7, Cambridge, MA (June - August 2013)

- Designed and developed an interactive visualization dashboard with multiple linked views for [UserInsight](#), a new Rapid7 cybersecurity data analysis product (using D3.js and Leaflet.js).
- Created the open source [dashboardScaffold](#) project, a framework for visualization dashboards.

### Software Engineer and Research Assistant

Institute for Visualization and Perception Research (IVPR)

University of Massachusetts Lowell, Lowell, MA (June 2005 - January 2012)

- Developed algorithms for automated pedigree layout in collaboration with Massachusetts General Hospital for clinical breast cancer risk assessment
- Co-project manager of the Weave project, oversaw server side development
- Worked as part of the development team of the Weave web-based visual analytics platform
- Contributed to the book "Interactive Data Visualization" by Ward, Grinstein and Keim
- Authored JyVis, an open source interactive visualization platform (Java, Python, Groovy)
- Authored utilities for named entity aggregation and full text search (Java, Lucene)
- Worked with a team of four to develop a visual document management system in C#
- Implemented session history recording and replay in the Universal Visualization Platform - IVPR's Java-based information visualization system

### **Guest Researcher**

Data Analysis and Visualization Group

University of Konstanz, Germany (June - August 2010, June - August 2011)

- Designed and prototyped the Universal Data Cube, a technology for dissemination and integration of semantically interlinked heterogeneous hierarchical data cubes
- Worked on conceptual research on visualizing overlapping heterogeneous data cubes

### **Software Engineer and Research Assistant**

Computer Graphics Center (ZGDV), Darmstadt, Germany (October 2007 - August 2008)

- Designed and implemented software for overlaying hairstyles on face pictures (Java)
- Worked with a team of three to design and implement a real-time vision-based markerless motion tracking (visual hull reconstruction and pose estimation) system (C, C++, CUDA)

### **Software Engineer and Research Assistant**

New England Complex Systems Institute (NECSI), Cambridge, MA (January - June 2006)

- Worked with a small team to develop a visualization and simulation platform for earth-wide socioeconomic dynamics (Java)

### **Research Assistant**

University of Massachusetts Medical School, Worcester, MA (June 2004 - June 2005)

- Assisted researchers with biological experiments investigating the role of RNAi components in drosophila (fruit fly) embryonic axis specification and related phenomena

## **TEACHING EXPERIENCE**

### **Teacher**

Teacher Massachusetts Institute of Technology (MIT), Cambridge, MA (July - August 2013)

- Designed and taught a seven-session course the MIT HSSP program
- Covered JavaScript language features and interactive graphics with HTML5 Canvas

### **Teaching Assistant**

University of Massachusetts Lowell, MA (January 2012 - May 2013)

- Computer Graphics II (Spring 2013)
- Introduction to Algorithms (Spring 2013)
- Computer Graphics I using OpenGL ES (Fall 2012)
- Foundations of Computer Science (Spring 2012)

### **Teacher of “[Computer Programming and Interactive Graphics](#)”**

Massachusetts Institute of Technology, Cambridge, MA (July - August 2012)

- A 52-hour evening course for high school students
- Covering JavaScript and [HTML5 graphics](#)
- Part of the [MIT Junction program](#)

## Teacher

Massachusetts Institute of Technology, Cambridge, MA (July - August 2007)

- Co-taught an 8-week course with MIT student Justin Curry, entitled "Gödel, Escher, Bach: A Mental Space Odyssey". Lecture videos [available on MIT's OpenCourseWare](#), content also available [here](#). Part of the MIT High School Studies Program.

## PUBLICATIONS

- Haim Levkowitz, Curran Kelleher. "Cloud and mobile Web-based graphics and visualization". IGI Global's "Encyclopedia of Information Science and Technology"
- Haim Levkowitz, Curran Kelleher. "Cloud and mobile Web-based graphics and visualization". Tutorial at SIBGRAPI 2012, Ouro Preto, Brazil
- Brian Drohan, Curran Kelleher, Georges Grinstein, Kevin Hughes. "Assessing Risks for Families with Inherited Cancers". Workshop on Visual Analytics in Healthcare: Understanding the Physician's Perspective. October 2011
- Curran Kelleher, Georges Grinstein "The Fractal Perspective Visualization Technique for Semantic Graphs". Fifteenth International Conference on Information Visualisation (IV'11) July 2011 London
- [JyVis - A Flexible High Level Visual - Analytics Framework](#) - Technical Report, 2007
- Howard Goodell, Chih-Hung Chiang, Curran Kelleher, Alex Baumann, Georges Grinstein. "Collecting and Harnessing Rich Session Histories" *iv*, pp. 117-123, Tenth International Conference on Information Visualisation (IV'06), 2006
- Howard Goodell, Chih-Hung Chiang, Curran Kelleher, Alex Baumann, Georges Grinstein. "Metrics for analyzing rich session histories" *BELIV*, 2006

## AWARDS

- 2011 Open Source Software World Challenge Certificate of Achievement
- 2011 UMass Lowell Computer Science Department Outstanding Graduate Student Award
- 2009 UMass Lowell Computer Science Department Merit Scholarship for Excellence in Computer Science
- 2008 Technische Universität Darmstadt Scholarship of Excellence

## ADDITIONAL

- [github.com/curran](https://github.com/curran) - ongoing - my open source code repositories
- [universaldatacube.org](http://universaldatacube.org) - ongoing - implementation for doctoral dissertation work
- [universalvisualization.org](http://universalvisualization.org) - ongoing - my blog on data visualization
- [curransoft.com/code](http://curransoft.com/code) - ongoing - a collection of technical guides and open source code
- President of the UMass Lowell Computer Science Graduate Student Organization (CSGSO) September 2012 to May 2013
- Secretary of the UMass Lowell CSGSO September 2011 to May 2012
- IEEE Student Member
- Play bass in [President Soup](#) (listen to our [2010 album](#) or [2013 album "Gumbo"](#))
- Wrote a [book](#) on my year abroad in Germany (2008 - 2009)