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**Software  
Development  
Experience**

**SnapDat Networks, Inc.**, iPhone Client Developer, 2008–2009.

Developed **SnapDat**, a native iPhone app for sending virtual business card. Includes multi-threading and secure network access. New York Times App of the Week, April 21, 2009.

**Cohomology.com**, Owner / Lead Programmer, 2002–present.

- **arXiv**. A native iPhone app for browsing the [arXiv.org](http://arXiv.org) e-print archive.
- The **Online Row Reducer**. A JavaScript tool for teaching linear algebra.
- The **Linear Algebrator**. A Mac OS X Cocoa application for teaching linear algebra.
- The **Adinkramat**. A Mac OS X Cocoa document-based, multi-threaded application for generating PDF and Encapsulated PostScript files describing off-shell supersymmetry.
- **TeXShop**. Open source Mac OS X Cocoa TeX editor and previewer by Dick Koch, winner of a 2002 Apple Design Award. I contributed the text autocompletion code and minor improvements.
- **BibDesk Scripts**. AppleScripts to export BibTeX citation data from Safari to BibDesk.

**Instinctual Software**, Contract Programmer, 2006–2007.

Coded the front end of **tether**, an application for browsing the Autodesk Stone file system, and **shrink**, an encoding application geared for VFX and the Post Production industry. Written in Cocoa using Objective-C++ and QuickTime.

**Unsanity LLC**, Contract Programmer, 2006.

Worked with Jason Harris on code in **ShapeShifter** and **ThemePark** for rendering and editing resizable button-like user interface elements, using Cocoa and CoreGraphics.

**Greg's Shareware**, Owner / Lead Programmer, 1991–2002.

Author of eight classic Mac OS shareware programs, which implemented forward-thinking user interface technologies years before Apple incorporated similar technologies into the Mac OS. These programs have been featured in Wired, MacWorld, MacUser, MacAddict, the Mac Home Journal, US News and World Report, and many, many Japanese magazines. They were all written in C and 680x0 and PowerPC assembly language, except where noted.

- **Kaleidoscope**. For a time the most popular Macintosh shareware program on the market. Skins the entire Mac OS to look like anything you want, using plug-in schemes. Works under System 7 through Mac OS 9, and in Mac OS X classic. I basically implemented my own version of Apple's Appearance Manager. Marketed commercially in Japan by Aplix.
- **Aaron**. For a time the most popular Macintosh shareware program on the market, until overtaken by Kaleidoscope. Skins System 7 to look like Mac OS 8.
- **Aaron Light**. Provides various improvements from Aaron under Mac OS 8 and higher.
- **BeView**. Skins the Mac OS to look like the BeOS.
- **SmoothType**. Anti-aliases all on-screen text. Originally released in 1995.
- **Power Windows**. Implements live window dragging using backing store.
- **Greg's Buttons**. Modifies appearance of buttons and other interface elements.
- **Greg's Browser**. NeXT-style file browser, written in C++.

Also coded the Kaleidoscope Scheme Archive with CGIs in Perl, and handled tech support.

**Adobe Systems, Inc.**, Contract Programmer, mid 1990's.

Wrote Macintosh code fragments in C for rendering user interface elements.

**BioMetallics, Inc.**, Programmer, 1990–1993.

Coauthor of DeltaSoft, a Macintosh interface program for spectrophotometer microplate readers, written in BASIC and C.

**Princeton Plasma Physics Laboratory**, Intern, 1989.

Wrote numerical analysis subroutines in FORTRAN.

**West Windsor-Plainsboro High School**, Software Consultant, 1986–1989.

Wrote gradebook and class rank programs in BASIC and 6502 assembly language.

## Software Awards

**MacLife Grand Prix** (Kaleidoscope, 1998)

**MacUser Shareware Award** (Greg's Browser, 1994)

**MacTutor Programmer's Challenge** (1992)

**American Computer Science League** (secondary school contest)

Placed first in the nation, as both individual and team.

## Web Sites

<http://www.cohomology.com/>

Site for my recent mathematical software.

<http://www.kaleidoscope.net/greg/>

Site for my Macintosh shareware products.

<http://www.kaleidoscope.net/schemes/>

The *Kaleidoscope Scheme Archive*, a repository for user-designed plug-ins.

<http://math.bard.edu/greg/>

Site for my academic work at Bard College.

## Programming Languages and Technologies

**Programming Languages.** Java, Python, C, Objective C, C++, BASIC, Pascal, 6502 assembly, 680x0 assembly, PowerPC assembly, FORTRAN, APL, Perl, JavaScript, AppleScript, LISP, Logo (I once wrote my own LISP and Logo interpreters in Pascal), TeX, LaTeX, HTML, CSS, XML. Anything else if you give me a couple of weeks.

**Mac OS/iPhone Technologies.** XCode, Cocoa, Carbon, iPhone SDK.

## Interests

Human Interface Design, Computer Graphics, Geometry, Topology, Mathematical Physics.

## Education

**Harvard University**, Ph.D. and A.M. in Mathematics, June, 1999.

**Oxford University**, M.Sc. in Mathematics, November, 1994.

**Cambridge University**, Certificate of Advanced Study in Mathematics with Distinction (Tripos, Part III), June, 1993.

**Princeton University**, A.B. in Mathematics *summa cum laude*, June, 1992.

Phi Beta Kappa, Certificate in Musical Performance (Bassoon).

**British Marshall Scholar** (1992–1994)

## Academic Positions

**Bard College**, Assistant Professor, 2007–present.

**University of Toronto/Fields Institute**, Visitor/Researcher, 2004–2005.

**University of Oregon**, Assistant Professor, 2001–2007.

**Mathematical Sciences Research Institute**, Post Doctoral Fellow, 2000–2001.

**Microsoft Research**, Post Doctoral Researcher, Theory Group, 1999–2000.