

# Leland J. Jefferis

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## Education

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### University of Wisconsin - Madison

*Ph.D. Mathematics, Advisor: Shi Jin*

*Sep./09 – May/14*

### Seattle University

*B.S. Mathematics, Summa Cum Laude*

*Sep./04 – May/08*

### Seattle University

*B.S. Physics, Summa Cum Laude*

*Sep./04 – May/08*

## Experience

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### Epic Systems

*Software Developer Team Lead*

*Mar./16 – present*

I led a team to develop advanced web apps, conduct dependency analysis, and perform long term planning.

- Mentored team members and guided weekly meetings to discuss projects and progress.
- Created and organized a seminar focused on disseminating self taught web related knowledge through informal presentations.
- Developed scripting tools for calculating and visualizing code dependencies of legacy code base.

### Epic Systems

*Software Developer*

*Feb./15 – Feb./16*

I worked collaboratively to develop advanced web apps within an advanced MVVM data binding web framework for use by Radiologists in the clinical setting.

- Optimized database query algorithms by performing in depth “Big-O” analysis.
- Devised long term migration strategies from legacy code base to the web.
- Performed rapid prototyping of experimental web client components.
- Wrote detailed design documents for proposed development.
- Completed and managed 10 projects in parallel on aggressive timelines.
- Constructed unit tests for all code produced.

### Seventh Harmonic LLC

*Co-Founder and Programmer*

*Aug./13 – present*

I Co-founded Seventh Harmonic (<http://seventhharmonic.com>), a mobile gaming company that produces original recreational software for mobile devices.

- Produced Bee-Line, an original puzzle game that combines maze elements with a Sudoku puzzle. Bee-Line currently has over 2000 users.
- Collaborated with a fellow programmer and an artist to create Bee-Line's unique game-play and aesthetics.
- Fabricated a custom game engine from scratch within the Android platform using Java and OpenGL.
- Worked with a legal team and UW – Madison business school to form an LLC and to conceive a marketing strategy.

### UW - Madison

*Research Assistant*

*Sep./09 – May/14*

I researched and developed new numerical methods to simulate high frequency wave motion in hyperbolic PDE.

- Passed three qualifying exams in a single testing period.
- Obtained strong research skills and sophisticated problem solving tactics.
- Communicated difficult concepts through technical writing and oral presentation.
- Wrote and produced three research papers with advisor Shi Jin in the subject of high frequency wave simulation.
- Presented at numerous applied/computational mathematics conferences.

### UW - Madison

*Teaching Assistant*

*Sep./09 – May/14*

I assisted and taught undergraduate and graduate level mathematics courses.

- o Recieved high student evaluation scores for all courses taught.
- o Taught an applied mathematics qualifying exam preparation summer course for incoming graduate students.

## Computer Skills

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**Languages:** C/C++, C#, Java

**Database:** SQL, MUMPS

**Web Client:** Javascript, JQuery, CSS/SCSS, AngularJS

**Scripting:** Bash, Emacs Lisp, AWK

**Editors:** Emacs, Visual Studio, Android Studio

**Other:** Android, Matlab, OpenGL, Python, FORTRAN

## Open Source Projects

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**Yasnippet Backsolve Emacs Extension:** This project added “backsolve” functionality to Yasnippet, a popular snippet entry tool for the Emacs editor. This allows the user to search for and re-edit blocks of code created using the snippet. The functionality is achieved by building a regular expression via careful parsing of Yasnippet’s snippet syntax. This addition transforms Yasnippet from an entry tool into an advanced editing tool.

**Tetromino 19:** This is the name of an optimized algorithm developed to tile arbitrary regions with polyominoes. The algorithm is at the core of both a game and a collaborative art project with Awdience LLC (<http://awdience.com>).

**Katyedid's Kitchen:** Built an HTTP server in C/C++ from scratch to be used as a back-end for a one page app style recipe management website (also built from scratch). The back-end is capable of data mining content from other recipe aggregators.

**Photon counting:** Researched and developed an asynchronous time-correlated single photon counting based auto-correlation algorithm in collaboration with Dr. Randall Goldsmith. The Matlab script implementation is competitive with commercial offerings and is freely available for researcher use.

**More:** Please visit my home page for further examples: <http://lelandjefferis.com>

## Selected Awards

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**National Science Foundation Mathematical Sciences Postdoctoral Research Fellowship:** Selected from national pool to perform postdoctoral research at Stanford University with George Papanicolaou. (declined)

**John Nohel Prize:** Awarded for outstanding work in applied math at UW - Madison

**John Ju Award:** Awarded for an exceptional graduate in science and engineering at Seattle University

**Goldwater Scholarship:** Selected from national pool of undergraduate applicants for academic excellence in the sciences.

## Languages

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**English:** Native

**Mandarin Chinese:** Conversational

## Hobbies

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**Music & Art:** Piano, guitar, music composition, and sketching.

**Rock-star:** Member of The Hum (a rock band).

**Exercise:** Rock climbing, surfing, backpacking, and dancing.

**Travel:** Traveled extensively in China, North America and Europe.