

# Jeremy D. Frens, Ph.D.

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## Summary

Computer scientist looking for a career in agile software development.

- Agile developer with excellent experience in test-driven development.
- Adept programmer in object-oriented and functional-programming paradigms.
- System administrator of Linux and Mac OS X systems.
- Educator with over fifteen years experience at the college level.
- Writer of academic research and laboratory manuals.

Technologies: languages (Java, Ruby, Scheme, C/C++,  $\LaTeX$ , some Haskell), frameworks and libraries (Rails, ANTLR), testing (JUnit, EasyMock, FitNesse, Test::Unit, shoulda, RSpec, Cucumber), IDEs (Eclipse, emacs, TextMate, RubyMine), databases (MySQL, PostgreSQL, sqlite), version control (Subversion, git, GitHub), systems and servers (Linux, Mac OS X, make, rake, bash shell, Apache).

## Significant Projects

### Department Website

Sole Programmer

Calvin College  
January 2007–present

The Computer Science department's website at Calvin College is a Ruby-on-Rails webapp (source on GitHub). The app provides a modest CMS with news and events as well as specialized features for an academic institution (e.g., faculty details, course information).

- Used as a sandbox for developing course material.
- Using behavior-driven development with RSpec and Cucumber.
- Administering production server.

### ANTLR Testing, CIAT, CITkit

Sole Programmer

SourceForge, GitHub  
Summer 2003–present

Three related projects for creating interpreters and compilers. ANTLR Testing is a JUnit extension for testing ANTLR grammars. CIAT is a framework for writing acceptance tests for interpreters and compilers, invoked as a rake task. CITkit is a Java library to support the building of interpreters and compilers.

### YAGS

Project Lead and Programmer

Calvin College  
Summer 2007

YAGS (Yet Another Genetics Simulator) is a Ruby-on-Rails webapp that simulates Mendelian genetics (including linked genes and chromosomal crossover) in fruit flies for biology students.

- Used Extreme Programming.
- Managed two student programmers.
- Developed and reviewed code.

### No Latte

Sole Programmer

SourceForge  
Summer 2003–present

No Latte is an interpreter for a language for writing XHTML documents in a functional-programming style— $\LaTeX$  sensibilities with LISP semantics.

- Testing with mock objects and user-level acceptance tests.
- Implemented in Java; uses ANTLR for the front-end.

## Work Experience

### Assistant Professor

Grand Rapids, MI

Calvin College

2000–2009

- Taught a variety of courses: introductory programming in C++ and Java, website administration, programming languages (using many agile techniques), automata and grammars, compilers.
- Added unit testing and other agile techniques to the curriculum.
- Advised students, served on department and college committees.
- Advised computer-science student club, awarded “Outstanding Advisor” in 2004.

### Externship at Atomic Object

Grand Rapids, MI

Calvin College, Atomic Object

Fall 2006

- Spent a semester at Atomic Object, an agile custom-software shop in Grand Rapids.
- Observed and participated in software development on a variety of projects.

### Java Instructor

Grand Rapids, MI

Rapistan/Dematic

2003, 2004

- Rapistan (now Dematic) transitioned developers from VisualBasic to Java.
- Taught two 12-week courses with colleague from Calvin College.
- Covered basics of object-oriented programming and standard Java libraries.

### Assistant Professor

Orange City, IA

Northwestern College

1998–2000

- Taught mostly upper-level courses including data structures, programming languages, computer architecture, ray tracing.

### Associate Instructor

Bloomington, IN

Indiana University

1992–1998

- Assisted and graded various courses: introductory programming, programming languages, data structures.
- Taught courses in summer as primary instructor: introductory programming, data structures.
- Awarded “Outstanding Associate Instructor” from Computer Science Department in 1998.

## Education and Certification

### Ph.D., Computer Science

Indiana University

Bloomington, IN

2002

- Specialized in functional programming, programming languages, and scientific computing.
- Examined the benefits on memory and parallelism provided by functional programming.

### Certified Scrum Master

Scrum Alliance

June 2009

### M.S., Computer Science

Indiana University

Bloomington, IN

1994

- Important courses: programming languages, compilers (2 semesters), computer graphics (2 semesters)

### B.A., Computer Science and Mathematics

Calvin College

Grand Rapids, MI

1992

- Important courses: compilers, databases, operating systems, programming languages, real analysis, linear algebra, abstract algebra, advanced logic, topology
- Awarded the Rinck Prize in mathematics, 1992

## Publications and Presentations

A complete curriculum vitae is available at [NoRecess.org](http://NoRecess.org) and upon request. Copies and access to publications also available upon request.

*Incremental Development of Interpreters*. In progress.

- Develops interpreters incrementally using test-driven development.

*Ruby and Rails*. Invited talk at monthly meeting of AITP West Michigan, 21 February 2008.

“15 Compilers in 15 Days” with Andy Meneely (student). *Proceedings of the 2006 ACM Symposium on Computer Science Education* (2006 March), 92–95.

- Describes success at developing compilers incrementally with test-driven development.

*Hands on C++* (2003), 3e, with Joel C. Adams. Prentice Hall.

- Lab manual for introductory programming course in C++.

*Hands on Testing Java* based on material by Joel C. Adams and Charles Hoot.

- Lab manual for introductory programming course in Java using JUnit extensively.