Jeremy D. Frens, Ph.D.

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Summary

Software developer, recently in academia, looking to develop software.

- Agile developer with excellent experience in test-driven development.
- Skilled in object-oriented and functional-programming paradigms.
- System administrator of Linux (Gentoo, Ubuntu, SuSE) 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), frameworks and libraries (Rails, RubyGem, ANTLR), testing (JUnit, FitNesse, Test::Unit, shoulda, RSpec, Cucumber), IDEs (Eclipse, emacs, TextMate, NetBeans, RubyMine), databases (MySQL, PostgreSQL, sqlite), version control (subversion, git, GitHub), tools (CruiseControl.rb, Trac), systems and servers (Linux, Mac OS X, bash shell, Apache).

Significant Projects

YAGS — Calvin College
Project Lead and Programmer — 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 — SourceForge
Sole Programmer — 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.
- Uses ANTLR for the front-end.

Department Website — Calvin College
Sole Programmer — January 2007–present

The Computer Science department's website at Calvin College is a Ruby-on-Rails webapp (source on GitHub). 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 — SourceForge, GitHub
Sole Programmer — Summer 2003–present

Three related projects for creating interpreters and compilers. ANTLR Testing is a unit-testing library for ANTLR grammars based on JUnit. 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.

Work Experience

Assistant Professor — Calvin College
Grand Rapids, MI — 2000–present

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

Externship at Atomic Object — Calvin College, Atomic Object
Grand Rapids, MI — 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 — Rapistan/Dematic
Grand Rapids, MI — 2003, 2004

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

Assistant Professor — Northwestern College
Orange City, IA — 1998–2000

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

Associate Instructor — Indiana University
Bloomington, IN — 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 — Bloomington, IN
Indiana University — 2002

- Specialized in functional programming, programming languages, and scientific computing.
- Examined the memory and parallelism benefits of a block-recursive decomposition of matrix structures and algorithms.

Certified Scrum Master
Scrum Alliance — June 2009

M.S., Computer Science — Bloomington, IN
Indiana University — 1994

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

B.A., Computer Science and Mathematics — Grand Rapids, MI
Calvin College — 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 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.

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.