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Summary

Software developer, recently in academe, looking to concentrate in development of software.

- Agile developer with excellent experience in test-driven development.
- Programmer in Java, Ruby, L^AT_EX, C/C++, Scheme, Haskell, and others.
- Skilled in object-oriented and functional-programming paradigms.
- System administrator on 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 for programming courses.

Significant Projects

YAGS

Project Lead and Programmer

Calvin College

Summer 2007

YAGS (Yet Another Genetics Simulator) is a Ruby-on-Rails webapp that simulates Mendelian genetics in fruit flies to teach genetics to college-level biology students. Genetic model is sophisticated enough to simulate linked genes and chromosomal crossover. Instructors set up their own scenarios for their students, and students submit solutions for the problems posed by their instructors.

- Managed two student programmers.
- Used Extreme Programming.
 - * Weekly planning meetings with on-site client.
 - * Test-driven development.
 - * Continuous integration.
 - * Week-long iterations.
- Developed and reviewed code.

Technologies: Aptana, Ruby, Rails 1.2, Test::Unit, shoulda, MySQL, CruiseControl.rb, subversion, git, GitHub, Apache (for subversion and for deployment), Linux (Ubuntu).

No Latte

Sole Programmer

SourceForge

Summer 2003–present

No Latte is an interpreter for a variation of the Latte language for writing XHTML documents in a functional-programming style—L^AT_EX sensibilities with LISP semantics.

- Testing with mock objects and user-level acceptance tests.
- Uses ANTLR for the front-end.

Technologies: Eclipse, Java, ANTLR, JUnit, ANTLR Testing, EasyMock, FitNesse, bash shell-scripting, CVS, subversion, SourceForge.

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). 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 material for Programming Languages course and a January-term Ruby-on-Rails course.
- Used behavior-driven development with RSpec and Cucumber.
- Administered production server.

Technologies: Aptana, NetBeans, RubyMine, Ruby, Rails 1.2–2.3, Test::Unit, RSpec, Cucumber, MySQL, sqlite, CruiseControl.rb, subversion, git, GitHub, Apache (for subversion and for deployment), Linux (SuSE and openSuSE).

ANTLR Testing

Sole Programmer

SourceForge
Summer 2003–present

ANTLR Testing is a unit-testing library for ANTLR grammars based on JUnit.

- Used in No Latte project.
- Used in Programming Language course by students at Calvin College.
- Used by other ANTLR developers.

Technologies: Eclipse, Java, ANTLR, JUnit, subversion, SourceForge.

CIAT

Sole Programmer

GitHub
Summer 2008–present

CIAT is a framework for writing acceptance tests for interpreters and compilers.

- Written as a Ruby gem.
- Used in Programming Languages course by students at Calvin College.

Technologies: TextMate, Ruby, RubyGems, rake, RSpec, git, GitHub.

CITkit

Sole Programmer

SourceForge
Fall 2004–present

CITkit is a Java library to facilitate the building of interpreters and compilers.

- Provides a tree intermediate representation of a programming language using the visitor pattern.
- Provides a symbol-table environment for nested variable scopes.
- Used in Compiler and Programming Languages courses at Calvin College.

Technologies: Eclipse, Java, JUnit, subversion, SourceForge.

Work Experience

Assistant Professor

Grand Rapids, MI

Calvin College
2000–present

- Taught a variety of courses: introductory programming in C++ and Java, website administration, programming languages, automata and grammars, compilers.
- Added to the curriculum.
 - * Introduced unit testing in introductory programming course.
 - * Added many agile techniques to programming-languages course.
- Advised students, and served on department and college committees.
- Advised computer-science student club.
 - * “Outstanding Advisor” award 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 their software development.
- Projects very varied:
 - * Desktop application for USB communication written in C, C++, and Java.
 - * Embedded development in C.
 - * Basic Ruby-on-Rails webapps.
 - * Ruby-on-Rails webapp for legacy database.
 - * Oracle development for health-insurance client.

Java Instructor
Grand Rapids, MI

Rapistan/Seimens
2003, 2004

- Rapistan (a local company, bought out by Siemens) needed to transition 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
Orange City, IA

Northwestern College
1998–2000

- Taught mostly upper-level courses including data structures, programming languages, computer architecture, and ray tracing.
- Served on department and college committees.

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

Ph.D., Computer Science
Indiana University

Bloomington, IN
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.

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: Real Analysis (2 semesters), Linear Algebra, Abstract Algebra, Advanced Logic, Topology, Compilers, Databases, Operating Systems, Programming Languages
- Awarded the Rinck Prize in mathematics, 1992

Certified Scrum Master
Scrum Alliance

June 2009

- Took course from Chet Hendrickson and Ron Jeffries

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.
- Used in Programming Languages course at Calvin College.
- Technologies include Java, JUnit, ANTLR, ANTLR Testing, CIAT (or FitNesse), and Eclipse.

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.
- Explains pedagogical benefits of incremental development.
- Used to motivate *Incremental Development of Interpreters*.

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

- Lab manual for introductory programming course in C++.
- Used at Calvin College for engineers.
- Significant re-write of 2nd edition.

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

- Lab manual for introductory programming course in Java.
- Used at Calvin College for Computer Science and Mathematics majors.
- Significant re-write of original *Hands on Java*.
- Improved the handling of object-oriented programming.
- Added unit-testing with JUnit to every lab.