

Gregory Martin Pfeil

Boulder, CO 80304-1023
USA
+1 206 399-3461

greg@technomadic.org
<http://technomadic.org>
@sellout

LANGUAGE DESIGN & IMPLEMENTATION • TOTAL FUNCTIONAL PROGRAMMING • AGILE DEVELOPMENT

Energetic, enthusiastic, and capable of providing the quality implied by the title of engineer, I am knowledgeable in language design and have a wide base of experience. I enjoy designing and building new tools for programmers and users that align with their particular domain and needs. These are often languages and libraries, but have also developed significant applications on many platforms. A strong and flexible part of any team, I am willing to take on less glamorous work to make sure the end result is of the highest possible quality.

PROGRAMMING EXPERIENCE

Backend Engineer – **SlamData, Inc.** (June 2014–July 2017)

- was the first hire at the company;
- implemented a expression-based **SQL** compiler with extensions for **NoSQL** operations [[Quasar](#)];
- designed a flexible **compiler** IR that adapts to the capabilities of various backends;
- implemented multiple compiler backends, including **MongoDB**, **Spark**, & **JavaScript**;
- mentored other developers in advanced **functional programming** techniques;
- contributed to the **Scala** compiler & many Open Source libraries; and
- created a generalized recursion scheme library for **Scala** [[Matryoshka](#)].

Senior Software Engineer – **Clozure Associates** (Dec. 2007–June 2014)

- converted a prototype musical composition tool to a production-quality product [[Opusmodus](#)];
- contributed to the implementation of programming languages in **Haskell** for DARPA-backed computer security project, including compilation to an experimental hardware architecture and created applications to demonstrate novel security features like **information flow control** [[CRASH-SAFE](#)];
- developed data model and performed overall system optimizations on the correlation engine of a high-level network intrusion system;
- performed benchmarking and optimization of large-scale airline reservation system [[ITA](#)];
- designed and implemented a financial term sheet simulator for the Evolvable Law project at Harvard's Berkman Center for Internet & Society;
- developed iOS applications for various clients, including a rebrandable news & information distribution system and a prototype assistive communications application for people with disabilities; and
- developed best-selling educational iOS games in **Objective-C** for toddlers [[Learning Touch](#)].

Software Development Engineer 2 – **Amazon.com** (Sep. 2004–Dec. 2007)

- conceived, designed, and developed a **declarative logic** system written in **Common Lisp** to simplify Website features while improving parallelism and performance [[Product Discovery Service](#)];
- revamped a **C++** content-scheduling system to add a **feedback-based learning** component, and to make it modular so third-parties could schedule new content [[Upsell Cart](#)];
- performed Weblab (A/B testing) experiments, acting as analyst in interpreting the data;
- personally responsible for millions of dollars in gross profit (as measured by Amazon's Weblab system);
- spearheaded skunkworks effort to support **Lisp** development; and
- wrote a generic structured-data retrieval service in **C++** to replace parsing of BDB values on the Web servers.

Personal Accomplishments

- designed a total language that uses fixed-points for recursion [[Fix](#)];
- presented talks on compiler design and recursion schemes at various conferences;
- wrote a cryptographic primitives library in **Idris**;
- created a family of languages based on various process calculi, implemented in **Common Lisp** & **Haskell** [[Kilns](#), ...];
- created an **avalanche risk mapping service**, which applies avalanche risk reports to maps, taking into account slope and aspect;
- maintain many **Libre & Open Source** projects on <https://github.com/sellout> and elsewhere;
- acted as wearable computing domain expert for NASA's Error Proof Flight Deck; and
- designed a personal wearable computer.

Education

James Madison University (Aug. 1996–Nov. 1999)

- studied Music Composition & Computer Science and
- taught programming (Perl, CGI) workshops in the Computer Science department.

Citizenship

- United States