Eric Griffis

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Research Interests

Programming languages
Communication-based concurrency
Distributed programming
Language-oriented programming

Education

UCLA

M.S., Computer Science *2011–2015*

Specialized in programming languages and software systems

Capstone: *Treep: an explicitly multi-phased programming language.* Advisor Todd Millstein.

B.S., Mathematics of Computation *2008-2011*

Publications

Griffis, Eric, Paul Martin, and James Cheney. "Semantics and provenance for processing element composition in dispel workflows." In *Proceedings of the 8th Workshop on Workflows in Support of Large-Scale Science*, pp. 38-47. ACM, 2013.

Research Experience

University of Edinburgh, School of Informatics

Research Fellow *Summer 2014*

- Designed a provenance tracking API based on a CCS-style formalism of Linda
- Implemented the API in Python for the dispel4py deployment platform
- Tested deployments to large heterogeneous clusters running Apache Storm and MPI

Research Fellow *Summer 2013*

- Produced formal syntax and operational semantics for the data-intensive systems programming language Dispel
- Implemented a prototype interpreter in Racket

University of California, Los Angeles

Graduate Student Researcher *Fall 2012*

- Modified the Lua runtime to prevent side effects
- Implemented and benchmarked an experimental dataflow programming language on top of it

Teaching Experience

University of California, Los Angeles

Teaching Assistant *Fall 2014*

COM SCI 111: Operating System Principles

Teaching Assistant *Spring 2014*

PIC 10A: Introduction to Programming

Teaching Assistant *Fall 2013*

PIC 20A: Principles of Java with Applications

Professional Experience

Instructor | Co-founder *2016–present*
Creator Playground San Marino, CA

- Coach children ages 8-12 to become confident creators and inventors
- Design lessons and activities for getting started with advanced consumer technologies including robotics, virtual reality, 3-D printing, and photogrammetry
- Supervise field trips to local maker spaces, museums, and laboratories

Software Architect | Acting CTO *2015–2016*
Advanced Robotics & Artificial Intelligence Culver City, CA

- Built data processing pipelines for artificial intelligence and machine learning applications
- Built context-aware chat bot apps for Android mobile platform
- Led three software engineers and a child psychologist in ed-tech product R&D
- Developed the company's technical vision from seed to angel investment

Technology Director | Founder *2010–2015*
EM Data Technology Arcadia, CA

- Created scalable Web applications and data processing systems
- Managed Web and data processing services for small to medium sized businesses

Software Consultant *2008–2009*
Jet Propulsion Laboratory Pasadena, CA

- Built a Web portal for indexing data sets and derived works shared across geographically distributed teams
- Analyzed a Web media de-classification portal and reported on potential performance improvements

Lead Programmer *2005–2006*
Hypermedia Systems Los Angeles, CA

- Maintained billing system serving 5K+ transactions per second
  - Doubled throughput by improving search and sort performance
- Planned software project timelines
- Negotiated technical requirements and timelines for internal software products
- Delegated programming tasks to a small team of Perl developers

Linux Administrator | Tool Developer *2003–2004*
FrontBridge Technologies Marina Del Rey, CA

- Automated Linux deployments for a multi-national Web presence
- Built Web apps and back-end data services for sales and support teams

Linux Administrator | Web Developer | Co-founder *2001–2002*
NetConcentric Las Vegas, NV

- Designed, implemented, and operated a high-volume Web hosting environment serving millions of personal Web sites
- Implemented an in-browser Web page editor serving 10K+ concurrent users
- Purchased computer hardware and data center services

Unix Administrator *2000–2001*
Overture Pasadena, CA

- Developed unix monitoring and administration automation systems
- Administered security-oriented Linux clusters
- Managed backup tapes
- Advised co-workers on advance Linux usage

Web Support Lead *1997–1999*
Earthlink Network Pasadena, CA

- Delegated tasks to a small team of e-mail support specialists
- Automated distribution of incoming support e-mails based on message contents

Talks

"Algebraic Racket in Action." RacketCon. Salt Lake City, Utah. July 2019.

"Dataflow network programming with Neuron." RacketCon. St. Louis, Missouri. September 2018.

"Semantics and Provenance for Processing Element Composition in Dispel Workflows." OSDC PIRE Video conference. September 2013.

"Multi-staged term rewriting in practice." Laboratory for Foundations of Computer Science, University of Edinburgh School of Informatics. Edinburgh, United Kingdom. July 2013.

"A platform for expressive and secure data sharing with untrusted third parties." The SoCal Programming Languages and Systems Workshop, UCSD. San Diego, California. December 2011.

Reports

Design and construction of scalable ad-hoc software overlay networks *Winter 2015*
UCLA COM SCI 239 project: Dynamic software overlay network visualizations.

pGrasp: A high-level distributed programming language *Winter 2014*

Distributed Graph-store Processing *Spring 2013*
UCLA COM SCI 246 project: Graph rewriting as a form of distributed computing.

Grasp: A dynamic, context-oriented, fully pluggable term rewriting system *Winter 2013*
UCLA COM SCI 239 project: A multi-stage programming language.

The taming of the view *Winter 2011*
UCLA COM SCI 199 project: Leveraging Wadler's views mechanism for drop-in performance gains.

Griffis, Eric, Jeffrey A. Vaughan, and Todd Millstein. *A platform for expressive and secure data sharing with untrusted third parties.* Technical Report 120017, University of California, Los Angeles, 2011.

Open-source Software

Algebraic Racket – algebraic structure for untyped Racket
A Haskell-inspired Racket dialect.

Neuron – decentralized software organisms
A decentralized functional programming framework for Racket.

Cmx – a calculus of mediated exchange
A DSL for creating multi-party synchronous rendezvous abstractions in Racket.

Event-lang – synchronizable event programming
A DSL for creating synchronizable events in Racket.

Community Service

K.L. Carver Elementary School PTA
San Marino, CA

Safety Chair *2015–2018*

- Represented Carver PTA at school functions and district safety meetings
- Directed safety operations for parking and traffic management volunteers
- Organized Safe-Routes-to-School program with a team of parent volunteers
- Organized annual Bike Rodeo event with local police and fire departments

Carnival Construction Chair *2015–2017*

- Oversaw setup and tear-down of temporary structures and heavy equipment for annual 1,000-person outdoor fundraising event
- Coordinated vendor and volunteer activity on the day of the event

Awards

Golden Nugget *2016*
For outstanding contributions to the Carver community.

Mr. Carver *2015*
For outstanding service and volunteerism to Carver School.