

Christopher R. Aberger

craberg@gmail.com
(415) 757-8240

EXPERIENCE	SambaNova Systems , Palo Alto, California	<i>November 2017-Present</i>
	<i>Senior Director of Machine Learning</i>	<i>2021-Present</i>
	<i>Director of Software Engineering</i>	<i>2020-2021</i>
	<i>Principal Engineer</i>	<i>2017-2019</i>
	Executive team member reporting to CEO Rodrigo Liang.	
	Technical lead and manager of the machine learning organization.	
	Scaled ML organization from 1 person (me) to over 30 people.	
	Received CEO award for engineering innovation and customer engagements	
	Stanford University , Palo Alto, California	<i>Fall 2013-Summer 2018</i>
	<i>Research Assistant</i>	
	Research under Christopher Ré and Kunle Olukotun	
	Google , Mountain View, CA	<i>Spring 2017</i>
	<i>Software Engineering Intern</i>	
	Materialized view query optimization in the F1 (massively distributed) database.	
	Apple Inc. , Austin, TX	<i>Summer 2013</i>
	<i>Design Performance Intern</i>	
	Machine learning applied to performance analysis for A7 chip design.	
	IBM , Austin, TX	<i>Summer 2012</i>
	<i>Hardware Engineering Co-op</i>	
	Functional verification and lab bring-up procedures for Power8 chip.	
EDUCATION	Stanford University , Stanford, California	
	<i>Doctor of Philosophy</i> in Computer Science	<i>Summer 2018</i>
	<i>Master of Science</i> in Computer Science	<i>Summer 2016</i>
	<i>Master of Science</i> in Electrical Engineering	<i>Spring 2015</i>
	University of Wisconsin , Madison, Wisconsin	<i>May 2013</i>
	<i>Bachelor of Science</i> in Computer Science	
	<i>Bachelor of Science</i> in Computer Engineering	
	<i>Minor</i> in Mathematics	
	Graduated with Highest Distinction	
PUBLICATIONS	Revisiting BFloat16 Training	2020
	<i>Pedram Zamirai, Jian Zhang, Christopher R. Aberger, Christopher De Sa</i>	
	Under submission	
	Understanding the Downstream Instability of Word Embeddings	2020
	<i>Megan Leszczynski, Avner May, Jian Zhang, Sen Wu,</i>	
	<i>Christopher R. Aberger, Christopher Ré</i> MLSys	
	PipeMare: Asynchronous Pipeline Parallel DNN Training	2019
	<i>Bowen Yang, Jian Zhang, Jonathan Li,</i>	

Christopher R. Aberger, Christopher De Sa, and Christopher Ré
Under submission

Low Memory Neural Network Training 2019
*Nimit Sharad Sohoni, Christopher R. Aberger, Megan Leszczynski,
Jian Zhang, and Christopher Ré*
arXiv preprint

HALP: High-Accuracy Low-Precision Training 2018
*Christopher R. Aberger, Christopher De Sa, Megan Leszczynski,
Alana Marzoev, Kunle Olukotun, Christopher Ré, and Jian Zhang*
Under submission

**LevelHeaded: A Unified Engine for Business Intelligence and
Linear Algebra Querying** 2018
Christopher R. Aberger, Andrew Lamb, Kunle Olukotun, and Christopher Ré
ICDE

EmptyHeaded: A Relational Engine for Graph Processing 2017
*Christopher R. Aberger, Andrew Lamb, Susan Tu, Andres Nötzli,
Kunle Olukotun, and Christopher Ré*
TODS

**Mind the Gap: Briding Multi-Domain Workloads with
EmptyHeaded** 2017
Christopher R. Aberger, Andrew Lamb, Kunle Olukotun, and Christopher Ré
VLDB Demo

EmptyHeaded: A Relational Engine for Graph Processing 2016
Christopher R. Aberger, Susan Tu, Kunle Olukotun, and Christopher Ré
SIGMOD, Best of

**Old Techniques for New Join Algorithms: A Case Study in
RDF Processing** 2016
Christopher R. Aberger, Susan Tu, Kunle Olukotun, and Christopher Ré
ICDE Workshop

**Have Abstraction and Eat Performance, Too: Optimized
Heterogeneous Computing with Parallel Patterns** 2016
*Kevin J. Brown, HyoukJoong Lee, Tiark Rompf, Arvind K. Sujeeth,
Christopher De Sa, Christopher Aberger, and Kunle Olukotun*
CGO

LANGUAGES C++, Python, Scala, Java, C

**SELECTED
COURSES** **University of Wisconsin-Madison**
Advanced Computer Architecture I (Superscalar design) (ECE 752)
Advanced Computer Architecture II (Multi-core design) (ECE 757)
Operating Systems (CS 537)
Computer Graphics (CS 559)
Algorithms (CS 577)

Stanford University

Databases (CS 145)
Automata and Complexity Theory (CS 154)
Logic (CS 157)
Programming Languages (CS 242)
Topics in Database Management Systems (CS 345)
Program Analysis and Optimizations (CS 243)
Advanced Topics in Operating Systems (CS 240)
Machine Learning (CS 229)