

Christopher R. Aberger

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EXPERIENCE **SambaNova Systems**, Palo Alto, California *November 2017-Present*

Director of Software Engineering *2020-Present*

Member of executive team reporting directly to CEO Rodrigo Liang.
Technical lead and manager of the machine learning organization.
Grew ML organization from 1 person (me) to over 30 people.
Received CEO award for engineering innovation and customer engagements

Principal Engineer *2017-2019*

Technical lead for machine learning development on our platform.
Designed and contributed to core pieces of software infrastructure.
Spearheaded and managed several customer engagements.

Stanford University, Palo Alto, California *Fall 2013-Summer 2018*

Research Assistant
Research under Christopher Ré and Kunle Olukotun

Google, Mountain View, CA *Spring 2017*

Software Engineering Intern
Materialized view query optimization in the F1 (massively distributed) database.

Apple Inc., Austin, TX *Summer 2013*

Design Performance Intern
Machine learning applied to performance analysis for A7 chip design.

IBM, Austin, TX *Summer 2012*

Hardware Engineering Co-op
Functional verification and lab bring-up procedures for Power8 chip.

EDUCATION **Stanford University**, Stanford, California

Doctor of Philosophy in Computer Science *Summer 2018*

Master of Science in Computer Science *Summer 2016*

Master of Science in Electrical Engineering *Spring 2015*

University of Wisconsin, Madison, Wisconsin *May 2013*

Bachelor of Science in Computer Science

Bachelor of Science in Computer Engineering

Minor in Mathematics

Graduated with Highest Distinction

PUBLICATIONS **Revisiting BFloat16 Training** 2020

Pedram Zamirai, Jian Zhang, Christopher R. Aberger, Christopher De Sa
Under submission

Understanding the Downstream Instability of Word Embeddings 2020

Megan Leszczynski, Avner May, Jian Zhang, Sen Wu,
Christopher R. Aberger, Christopher Ré
MLSys

PipeMare: Asynchronous Pipeline Parallel DNN Training <i>Bowen Yang, Jian Zhang, Jonathan Li, Christopher R. Aberger, Christopher De Sa, and Christopher Ré</i> Under submission	2019
Low Memory Neural Network Training <i>Nimit Sharad Sohoni, Christopher R. Aberger, Megan Leszczynski, Jian Zhang, and Christopher Ré</i> arXiv preprint	2019
HALP: High-Accuracy Low-Precision Training <i>Christopher R. Aberger, Christopher De Sa, Megan Leszczynski, Alana Marzoev, Kunle Olukotun, Christopher Ré, and Jian Zhang</i> Under submission	2018
LevelHeaded: A Unified Engine for Business Intelligence and Linear Algebra Querying <i>Christopher R. Aberger, Andrew Lamb, Kunle Olukotun, and Christopher Ré</i> ICDE	2018
EmptyHeaded: A Relational Engine for Graph Processing <i>Christopher R. Aberger, Andrew Lamb, Susan Tu, Andres Nötzli, Kunle Olukotun, and Christopher Ré</i> TODS	2017
Mind the Gap: Briding Multi-Domain Workloads with EmptyHeaded <i>Christopher R. Aberger, Andrew Lamb, Kunle Olukotun, and Christopher Ré</i> VLDB Demo	2017
EmptyHeaded: A Relational Engine for Graph Processing <i>Christopher R. Aberger, Susan Tu, Kunle Olukotun, and Christopher Ré</i> SIGMOD, Best of	2016
Old Techniques for New Join Algorithms: A Case Study in RDF Processing <i>Christopher R. Aberger, Susan Tu, Kunle Olukotun, and Christopher Ré</i> ICDE Workshop	2016
Have Abstraction and Eat Performance, Too: Optimized Heterogeneous Computing with Parallel Patterns <i>Kevin J. Brown, HyoukJoong Lee, Tiark Rompf, Arvind K. Sujeeth, Christopher De Sa, Christopher Aberger, and Kunle Olukotun</i> CGO	2016

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)