Christopher R. Aberger

craberger@gmail.com
(415) 757-8240

EXPERIENCE

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

Senior Director of Machine Learning — *2021-Present*
Director of Software Engineering — *2020-2021*
Principal Engineer — *2017-2019*
Executive team member reporting to CEO Rodrigo Liang.
Technical lead and manager of the machine learning organization.
Scaled machine learning organization from 1 person (me) to over 30 people.
Received CEO award for engineering innovation and 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

PipeMare: Asynchronous Pipeline Parallel DNN Training — 2021
Bowen Yang, Jian Zhang, Jonathan Li,
Christopher R. Aberger, Christopher De Sa, and Christopher Ré
MLSys

Revisiting BFloat16 Training — 2020
Pedram Zamirai, Jian Zhang, Christopher R. Aberger, Christopher De Sa
arXiv preprint

Understanding the Downstream Instability of Word Embeddings — 2020
Megan Leszczynski, Avner May, Jian Zhang, Sen Wu,

Christopher R. Aberger, Christopher Ré
MLSys

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)