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Firas Abuzaid

Curriculum Vitae

Education

2016-present **Ph.D., Computer Science**, Stanford University
Advisors: Peter Bailis and Matei Zaharia

2015-2016 **Ph.D., Course VI-II**, Massachusetts Institute of Technology
Advisors: Sam Madden and Matei Zaharia
- Transferred to Stanford in Fall 2016 with advisor

2013–2015 **M.S., Computer Science**, *Stanford University*
Advisor: Christopher Ré
- Concentrations: Artificial Intelligence, Information

2009–2013 **B.S., Computer Science**, *Stanford University*
Concentration: Information
- Phi Beta Kappa, Tau Beta Pi

Publications

2019 F. Abuzaid, G. Sethi, P. Bailis, and M. Zaharia **To Index or Not to Index: Optimizing Exact Maximum Inner Product Search.** To appear at ICDE 2019.

2019 F. Abuzaid, P. Kraft, S. Suri, E. Gan, E. Xu, A. Shenoy, A. Anathanarayan, J. Sheu, E. Meijer, X. Wu, J. Naughton, P. Bailis, and M. Zaharia. **DIFF: A Relational Interface for Large-Scale Data Explanation.** To appear at VLDB 2019.

2018 F. Abuzaid, P. Bailis, J. Ding, E. Gan, S. Madden, D. Narayanan, K. Rong, and S. Suri (equal co-authorship). **MacroBase: Prioritizing Attention in Fast Data.** TODS 2018.

2018 S. Palkar, F. Abuzaid, P. Bailis, and M. Zaharia. **Filter Before You Parse: Faster Analytics on Raw Data with Sparser.** VLDB 2018.

2017 D. Kang, J. Emmons, F. Abuzaid, P. Bailis, and M. Zaharia. **NoScope: Optimizing Neural Network Queries over Video at Scale.** VLDB 2017.

2016 F. Abuzaid, J. Bradley, F. Liang, A. Feng, L. Yang, M. Zaharia, and A. Talwalkar. **Yggdrasil: An Optimized System for Training Deep Decision Trees at Scale.** NIPS 2016.

2015 S. Hadjis, F. Abuzaid, C. Zhang, and C. Ré. **Caffe con Troll: Shallow Ideas to Speed Up Deep Learning.** SIGMOD 2015, DanaC: Workshop on data analytics at scale.

Work Experience

Research

06/2019–09/2019 **Research Intern**, *Microsoft Research*, Redmond, WA
- Developed new traffic engineering algorithms for wide-area networks (work in progress)
- Mentored by Srikanth Kandula

02/2018–11/2018 **Research Contractor**, *Facebook*, Menlo Park, CA
- Developed and deployed Spark pipeline for MacroBase (https://macrobase.stanford.edu) to automatically explain anomalies in large-scale datasets for Facebook's Infrastructure organization
- Worked with FBLearner team to develop optimization strategies for improving resource efficiency of FBLearner's Inference Platform

04/2014–06/2015 **Research Assistant**, *Stanford InfoLab*, Prof. Christopher Ré
- Developed Caffe con Troll, CPU optimizer for Caffe. Resulted in publication
  - http://github.com/HazyResearch/CaffeConTroll
- Worked on multi-round Pregel-like join algorithm for distributed datasets
- **Technologies and Libraries**: Scala, Spark, SparkSQL, Hive, YARN, Hadoop/HDFS

01/2014–03/2014 **Independent Research Project**, *Stanford AI Lab*, Prof. Andrew Ng
- Worked on re-alignment improvements for deep neural networks on speech recognition systems
- **Technologies and Libraries**: C++, Python, Kaldi, Google Web Speech API

Industry

06/2012–09/2012 **Android Engineer Intern**, *Clinkle*, Mountain View, CA
Initial implementation of the Clinkle Android application

06/2011–09/2011 **Software Engineer Intern**, *Amazon Lab126*, Cupertino, CA
Developed QuickSettings app for Kindle Fire; debugged, refined UI/UX for other system apps on Android 2.3.3

Teaching

2014–2015 **Awards**
- Recipient of the 2014 Centennial Teaching Assistant Award

2014–2015 **Instructor**, *Stanford Computer Science Department*
- **CS145**, *Introduction to Databases*, Co-Instructor with Perth Charernwatttanagul, Summer 2014

2014–2015 **Mentor in Teaching Fellow**, *Stanford Computer Science Department*
Responsible for assisting and mentoring new Teaching Assistants for the CS department

2013–2015 **Teaching Assistant**, *Stanford Computer Science Department*
- **CS142**, *Web Applications*, Profs. John Ousterhout and Phillip Levis, Spring 2013 - Spring 2014
- **CS145**, *Introduction to Databases*, Profs. Christopher Ré and Jennifer Widom, Fall 2013 - Fall 2014

2011–2012 **CS198 Section Leader**, *Stanford Computer Science Department*
Responsible for leading weekly discussion sections to complement lecture for introductory Computer Science classes – CS106A, B, and X

Legal

06/2018–present **Expert Consultant for Technical Patent Litigation**, *Shearman & Sterling, LLP*
- **Vendavo, Inc. v. Price f(x) AG et al**, Analyzed and compared Vendavo's and Price f(x)'s respective code bases using state-of-the-art source code comparison techniques. Demonstrated that Price f(x)'s source code was not in violation of Vendavo's copyright protections
- **Additional cases**, Examined patent infringement claims filed against the defendants; for each, identified prior art to invalidate the claims

Other

01/2014–01/2015 **Master's Student Liaison**, *Stanford Computer Science Department*
Responsible for communicating and voicing students' feedback and concerns to CS faculty

2011–2012 **Academic Theme Associate**, *Stanford Residential Education*
Residential staff position – responsible for creating and planning theme-related programming for the Crothers Global Citizenship dorm

Professional Service

2019 **Reviewer**
- NeurIPS (2019), JMLR (2019)

Invited Talks

2018 **MacroBase: Prioritizing Attention in Big Data**, *ODSC West 2018.*
- https://odsc.com/training/portfolio/macrobase-prioritizing-human-attention-in-big-data-2

2018 **Sparser: Faster Parsing of Unstructured Data Formats in Apache Spark**, *Spark+AI Summit 2018.*
- https://databricks.com/session/sparser-faster-parsing-of-unstructured-data-formats-in-apache-spark

2017 **MacroBase: Prioritizing Attention in Fast Data**, *HPTS 2017.*
- http://www.hpts.ws/papers/2017/macrobase-hpts.pdf

2016 **Yggdrasil: Faster Decision Trees Using Column Partitioning In Spark**, *Spark Summit 2016.*
- https://databricks.com/session/yggdrasil-faster-decision-trees-using-column-partitioning-in-spark