Abdul Wasay

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Research. Performant ML & deep learning systems • Improving programmer productivity • ML-aided HW Design

EDUCATION

Harvard University   Cambridge, MA
Doctor of Philosophy in Computer Science (GPA:3.8/4)   2014 − 2021
• Thesis: Computation-Cautious Machine Learning Systems
Masters of Science in Computer Science (GPA:3.75/4)   2014 − 2016

Lahore University of Management Sciences   Lahore, Pakistan
Bachelors of Science in Computer Science (GPA:3.9/4)   2010 − 2014

RESEARCH AND PROFESSIONAL EXPERIENCE

Intel Labs: *Machine Learning Research Scientist*   September 2021 − present
• Using deep learning techniques to improve programmer productivity and enable better hardware design *(1 publication, 1 opensource software, 3 patent submissions)*

Harvard University: *Graduate Researcher*   August 2014 − May 2021
• Designed and implemented four different systems to accelerate machine learning pipelines advancing the state-of-the-art in data exploration, deep learning model design, training, and deployment *(8 publications, 2 patents)*
• Collaborated with researchers to automate the design of data systems through reinforcement learning techniques
• Mentored nine undergraduate researchers from Harvard, CMU, and Peking University *(3 publications, 1 award)*

Hewlett Packard Enterprise: *Researcher*   Summer 2017
• Designed a technique to reduce the overhead of storing and querying network traffic data by 10× *(1 patent)*
• Collaborated with the engineering team to incorporate this research into their product, Arcsight

École Polytechnique Fédérale de Lausanne (EPFL): *Undergraduate Researcher*   Summer 2013
• Developed and evaluated an algorithm to incorporate community structure for social graph de-anonymization

NOTABLE LEADERSHIP & TEAMWORK EXPERIENCE

Harvard University: *Instructor at Harvard Summer School*   Summer 2019
• Designed and taught Harvard's first hybrid course on data systems and machine learning *(course rating: 4.8/5)*
• Supervised a course staff of two Ph.D. students to run the course

Ashesi University: *Visiting Faculty (Archer-Cornfield Fellowship)*   August 2019 − June 2020

• Designed and taught three undergraduate courses on data systems and machine learning *(100 students total)*
• Mentored four undergraduate students on their senior-year research projects
• Lead the curriculum redesign committee to refresh the coursework for the data science and machine learning track

Harvard College: *Resident Tutor at Quincy House*   August 2015 − May 2019
• Advised 7 Harvard College sophomores on academic matters and managed an entryway of 30 students per year
• Lead the LGBTQ+ Committee (2 tutors, 10 students)
• Co-founded the InQlusivity initiative to improve inclusion and diversity within the residential house community

NOTABLE AWARDS

• Harvard SEAS Computer Science Outstanding Ph.D. Dissertation Award (honorable mention)   2021
• Archer-Cornfield Fellowship   2019 − 2020
• Second place at ACM SIGMOD Research Competition (student award)   2020
• Most Reproducible Paper Award at SIGMOD   2017
• Dean's Honor List at LUMS + NOP Scholarship   2010 − 2014

SELECTED PUBLICATIONS & PATENTS

Machine Programming: Turning Data into Programmer Productivity.
Abdul Wasay, Nesime Tatbul, and Justin Gottschlich.
International Conference on Very Large Databases *VLDB* 2022.

More or Less: When and How to Build Convolutional Neural Network Ensembles.
Abdul Wasay and Stratos Idreos.
International Conference on Learning Representation *ICLR* 2021.

Deep Learning: Systems and Responsibility.
Abdul Wasay, Subarna Chatterjee, and Stratos Idreos.
ACM International Conference on Management of Data *SIGMOD*, 2021.

MotherNets: Rapid Deep Ensemble Learning.
Abdul Wasay, Brian Hentschel, Yuze Liao, Sanyuan Chen, and Stratos Idreos.
Conference on Machine Learning and Systems *MLSys* 2020.

Learning Data Structure Alchemy.
Stratos Idreos, Kostas Zoumpatianos, Subarna Chatterjee, Wilson Qin, **Abdul Wasay**, Brian Hentschel, Mike Kester,
Niv Dayan, Demi Guo, Minseo Kang, and Yiyou Sun
Bulletin of the IEEE Computer Society Technical Committee on *Data Engineering*, 2019.

The Periodic Table of Data Structures.
Stratos Idreos, Konstantinos Zoumpatianos, Manos Athanassoulis, Niv Dayan, Brian Hentschel, Michael S. Kester,
Demi Guo, Lukas Maas, Wilson Qin, **Abdul Wasay**, Yiyou Sun.
Bulletin of the IEEE Computer Society Technical Committee on *Data Engineering*, 2018.

Data Canopy: Accelerating Exploratory Statistical Analysis.
Abdul Wasay, Xinding Wei, Niv Dayan, and Stratos Idreos.
ACM International Conference on Management of Data *SIGMOD*, 2017.

Queriosity: Automatic Data Exploration.
Abdul Wasay, Manos Athanassoulis, and Stratos Idreos.
IEEE International Congress on *BigData*, 2015.

Rethinking Buffer Management In Data Center Networks.
Aisha Mushtaq, Asad K. Ismail, **Abdul Wasay**, Bilal Mahmood, Ihsan A. Qazi, and Zartash A. Uzmi.
ACM International Conference on Data Communications *SIGCOMM*, 2014.

Systems and Methods for Accelerating Exploratory Statistical Analysis.
Stratos Idreos, **Abdul Wasay**, Niv Dayan.
U.S. Patent 16,605,510. Issued on September 9, 2021.

Network Traffic Data Summarization
Abdul Wasay, Alkiviadis Simitsis, Martin Arlitt.
U.S. Patent 10,432,539. Issued on October 1, *2019.*

RECENT INVITED TALKS

Intel Labs, Morgan Stanley ML Labs, UCSD, Microsoft Research NYC, Boston University	2021
LUMS, Tableau	2020
Google Research Accra, Ashesi University, Vertica, NetApp	2018-2019

RECENT SERVICE

Program Commitee Member: for the 6th Annual Symposium on Machine Programming (MAPS@PLDI)	2022
Reviewer: IEEE ICDE Industry Track, VLDB Research Track, ACM Journal of Data Science	2021, 2022