Aunn Raza

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RESEARCH INTERESTS

Database Systems, HTAP Systems, Parallel & Distributed Systems, Operating Systems, Data-center Systems

EDUCATION

École Polytechnique Fédérale de Lausanne (EPFL) — Lausanne, CH
Ph.D. in Data-Intensive Applications and Systems (DIAS) Laboratory — 2018–Current
- Tentative Thesis: "High-performance operational analytics on fresh data"
- Advisor: Prof. Anastasia Ailamaki

National University of Sciences and Technology (NUST) — Islamabad, PK
B.S. in Computer Sciences, GPA: 3.81/4.00, 3rd rank in class — 2012–2016
- Thesis: "Analytics and Visualizations in OpenStack Clouds"
- Advisor: Prof. Faisal Shafait, Dr. Junaid Qadir, Dr. Usman Ilyas

PUBLICATIONS

[1] **A. Raza**, P. Chrysogelos, A. G. Anadiotis, and A. Ailamaki, "Adaptive HTAP through elastic resource scheduling", in *Proceedings of the 2020 International Conference on Management of Data, SIGMOD Conference 2020, online conference [Portland, OR, USA], June 14-19, 2020*, D. Maier, R. Pottinger, A. Doan, W. Tan, A. Alawini, and H. Q. Ngo, Eds., ACM, 2020, pp. 2043–2054.

[2] **A. Raza**, P. Chrysogelos, P. Sioulas, V. Indjic, A. G. Anadiotis, and A. Ailamaki, "Gpu-accelerated data management under the test of time", in *CIDR 2020, 10th Conference on Innovative Data Systems Research, Amsterdam, The Netherlands, January 12-15, 2020, Online Proceedings*, www.cidrdb.org, 2020.

[3] M. Usama, J. Qadir, **A. Raza**, H. Arif, K. A. Yau, Y. Elkhatib, A. Hussain, and A. I. Al-Fuqaha, "Unsupervised machine learning for networking: Techniques, applications and research challenges", *IEEE Access*, vol. 7, pp. 65 579–65 615, 2019.

[4] C. Iorgulescu, F. Dinu, **A. Raza**, W. U. Hassan, and W. Zwaenepoel, "Don't cry over spilled records: Memory elasticity of data-parallel applications and its application to cluster scheduling", in *2017 USENIX Annual Technical Conference, USENIX ATC 2017, Santa Clara, CA, USA, July 12-14, 2017*, D. D. Silva and B. Ford, Eds., USENIX Association, 2017, pp. 97–109.

TEACHING

- **Teaching Assistant** at **EPFL**
  CS-422: Database Systems [Spring 2020]
  CS-322: Introduction to Database Systems [Spring 2019]
  COM-208: Computer Networks [Fall 2019, Fall 2020]

Skills

- **Programming Language:** C/C++, SQL, Python, JAVA, JavaScript, Bash
- **BigData Frameworks:** Apache Hadoop/Spark/YARN/Hive
- **Database Systems:** PostgreSQL, MySQL, Oracle, ElasticSearch, Solr
- **Debugging and Peformance Analyzer:** Intel Vtunes Amplifier, Nvidia Nsight Systems, gdb, perf

Research Experience

École Polytechnique Fédérale de Lausanne (EPFL) Lausanne, CH

Doctoral Assistant at DIAS Laboratory (Advisor: Prof. Anastasia Ailamaki) 2018–Current

- − Topic: Adaptive scheduling in HTAP DBMS/

École Polytechnique Fédérale de Lausanne (EPFL) Lausanne, CH

Summer Intern at LabOS Laboratory (Supervisor: Prof. Willy Zweaenpool, Dr. Florin Dinu) Summer 2016

- − Topic: Leveraging Memory Elasticity in Apache Spark.

National University of Sciences and Technology (NUST) Islamabad, PK

Undergrad thesis at TULK-NUST R&D Center (Supervisor: Dr. Faisal Shafait, Dr. Junaid Qadir) 2015–2016

- − Topic: Deep Learning based VM-level anomaly detection in OpenStack clouds.

National University of Sciences and Technology (NUST) Islamabad, PK

Research Intern at HPC Laboratory (Supervisor: Dr. Aamir Shafi) 2014–2015

- − Topic: Support for Infiniband interconnect in MPJExpress.

Honors and Awards

- EPFL EDIC Ph.D. Fellowship 2018
- Best adjudged industrial final year project award at NUST SEECS Openhouse 2016
- NUST highest merit scholarship (8 semesters) 2012-2016

Industrial Experience

VisionX Technologies Islamabad, PK/ New York, USA

Software Engineer (Cloud Systems) 2017–2018

- − Design and deployment of serverless cloud architecture for PackageX, a VisionX product.
- − Design and deployment of enterprise CICD pipelines for streamlined development processes.

Techlogix, Pvt. Ltd. Karachi, PK

Software Engineer (Data Analytics) 2016–2017

- − Design and prototype deployment of Cloudera based data warehouse and analytical pipelines
- − Analytical dashboards with Microsoft PowerBI