

INTERESTS	Distributed systems, Serverless Computing	
EDUCATION	Ph.D., Computer Science <i>University of Illinois at Urbana-Champaign (UIUC), USA</i> <ul style="list-style-type: none">Sohaib and Sara Abbasi FellowAdvisor: Prof. Indranil Gupta M.S. alongside Ph.D., Computer Science <i>University of Illinois at Urbana-Champaign (UIUC), USA</i> <ul style="list-style-type: none">Advisor: Prof. Indranil GuptaC.GPA: 3.91/4.00 B.E., Computer Science <i>National University of Sciences & Technology (NUST), Pakistan</i> <ul style="list-style-type: none">C.GPA: 4.00/4.00; Class Standing: 1/76	08/2015 — present 08/2015 — present 08/2015 — 12/2017 08/2011 — 06/2015
GRADUATE RESEARCH, DPRG , UIUC	Henge: An SLO-Driven Multi-Tenant Stream Processing Scheduler <ul style="list-style-type: none">Henge is an adaptive scheduler that helps topologies running on a multi-tenant stream processing system (e.g., Apache Storm) satisfy their latency and throughput service level objectives.Under submission to ACM SoCC 2018. Verified Blockchains <ul style="list-style-type: none">We formally verify and implement a simplified version of the Blockchain protocol. This removes bugs a priori, potentially saving users from bugs that can lead to a loss of currency, but is challenging to do at a distributed system level.Under submission to OSDI 2018. Mélange: A Multi-Tenant Scheduler for Graph Processing Jobs <ul style="list-style-type: none">Mélange is a multi-tenant, priority-aware scheduler for distributed graph processing systems such as Apache Giraph that aims to reduce job waiting time and starvation, and increase cluster utilization.Under submission to ACM SoCC 2018. Partitioning Stream Processing Jobs Between the Edge and Cloud <ul style="list-style-type: none">The edge is rarely equipped with sufficient resources to support full stream processing jobs. We propose an algorithm to partition such jobs between the edge and the cloud, such that the amount of data transferred between the two is minimized, while ensuring that the end-to-end processing latency of the input remains unaffected.	Present Present Present Present
UNDERGRADUATE RESEARCH, AN-DASH , NUST	Crater: CRowd-sourcing Application To measure Road conditions <ul style="list-style-type: none">A cloud-hosted back-end used classification methods to discover patterns representing potholes and speedbumps on the road using crowd-sourced accelerometer readings from smartphones.Project awarded grant through Microsoft Azure for Research (2014 – 2015).	05/2014 – 06/2015
INTERNSHIPS	Software Engineering Intern, Real-Time Compute Team, Twitter <ul style="list-style-type: none">I will be designing and evaluating Caladrius, a system that predicts the performance of different deployment plans of Heron topologies and chooses one that optimizes user requirements. Research Intern, Cloud Container Operating System Project, IBM Research <ul style="list-style-type: none">Optimized the scheduler in Spark Streaming to prevent load imbalances and mitigate stragglers. Software Engineering Intern, Site Reliability Engineering Team, Uber <ul style="list-style-type: none">Worked on a monitoring system that provided an explicit signal of failed operations witnessed by a user. As Uber must provide 99.99% availability, a difficult challenge was to ensure that the system is 99.995% available—more available than Uber itself—while providing a high signal-to-noise ratio.	Summer 2018 Summer 2017 Summer 2016
POSTERS	<ul style="list-style-type: none">Faria Kalim et al., ‘Reducing Tail Latencies in Micro-Batch Stream Processing Systems’, In <i>Proceedings of the ACM Symposium on Cloud Computing</i>. 2017.Faria Kalim, Shadi Noghabi, Shiv Verma, ‘To Edge or Not to Edge?’, In <i>Proceedings of the ACM Symposium on Cloud Computing</i>. 2017.	

SELECT HONORS AND AWARDS	<ul style="list-style-type: none"> • Sohaib and Sara Abbasi Fellowship, Fall 2015 – present • Recipient of the Usenix Student Grant, ATC 2017 & travel funding for SoCC 2017 • Selected by CS @ Illinois to receive travel funding for the 2017 Richard Tapia Celebration • Selected to join Tau Beta Pi, the oldest engineering honor society in the US, Fall 2015 — present • Recipient of President’s Gold Medal for academic excellence in undergraduate studies, 2015 • NUST Scholarship for all semesters since admission in undergraduate studies, Fall 2011 – Fall 2014
SYSTEMS AND SOFTWARE SKILLS	<ul style="list-style-type: none"> • Programming Languages (in decreasing order of proficiency): Java, C++, Python, Go, Scala • Programming Models: OpenMP, MPI, Android fundamentals • Frameworks: Apache Storm, Apache Heron, Apache Spark
TEACHING EXPERIENCE	<div> Graduate Teaching Assistant Fall 2017 </div> <ul style="list-style-type: none"> • CS425 – Distributed Systems • As Head-TA of the course, I volunteered to teach a short overview of Apache Spark, which was later also included in the Coursera version of the course.