

# Faria Kalim

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INTERESTS	Distributed systems	
EDUCATION	<b>Ph.D., Computer Science</b> <i>University of Illinois at Urbana-Champaign (UIUC), USA</i> <ul style="list-style-type: none"><li>• Sohaib and Sara Abbasi Fellow</li><li>• Advisor: <a href="#">Prof. Indranil Gupta</a></li></ul>	08/2015 — present
	<b>M.S. alongside Ph.D., Computer Science</b> <i>University of Illinois at Urbana-Champaign (UIUC), USA</i> <ul style="list-style-type: none"><li>• Advisor: <a href="#">Prof. Indranil Gupta</a></li><li>• C.GPA: 3.91/4.00</li></ul>	08/2015 — 12/2017
	<b>B.E., Computer Science</b> <i>National University of Sciences &amp; Technology (NUST), Pakistan</i> <ul style="list-style-type: none"><li>• C.GPA: 4.00/4.00; Class Standing: 1/76</li></ul>	08/2011 — 06/2015
GRADUATE RESEARCH, <a href="#">DPRG</a> , UIUC	<b>Holistic Parameter Tuning for <a href="#">Apache Heron</a></b> <ul style="list-style-type: none"><li>• We investigate how to optimize all of the most important configuration parameters in Heron jobs to achieve different performance goals e.g., latency, throughput, and resource utilization.</li></ul>	Present
	<b>Verified Blockchains</b> <ul style="list-style-type: none"><li>• 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.</li></ul>	Present
UNDERGRADUATE RESEARCH, <a href="#">AN-DASH</a> , NUST	<b>Crater: CRowd-sourcing Application To measure Road conditions</b> <ul style="list-style-type: none"><li>• 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.</li><li>• Project awarded grant through Microsoft Azure for Research (2014 – 2015).</li></ul>	05/2014 – 06/2015
PUBLICATIONS	<ul style="list-style-type: none"><li>• <b>Faria Kalim</b>, Jaehoon Paul Jeong, Muhammad Usman Ilyas, “Crater: A Crowd Sensing Application to Estimate Road Conditions”, <i>IEEE Access</i> 4 (2016): 8317-8326.</li><li>• <b>Faria Kalim</b>, Le Xu, Sharanya Bathey, Richa Meherwal, Indranil Gupta, “Henge: Intent-driven Multi-Tenant Stream Processing”, <i>Symposium of Cloud Computing</i> (2018)</li><li>• <b>Faria Kalim</b>, Thomas Cooper, Yao Li, Ning Wang et al., “Caladrius: A Performance Modelling Service for Distributed Stream Processing Systems”, <i>IEEE International Conference on Data Engineering</i> (2019)</li></ul>	
PRE-PRINTS	<ul style="list-style-type: none"><li>• <b>Faria Kalim</b>, Shadi Noghabi., ‘Bené: On Demand Cost-Effective Scaling at the Edge’, <i>arXiv pre-print:1806.09265</i>, 2018.</li></ul>	
POSTERS	<ul style="list-style-type: none"><li>• <b>Faria Kalim</b> et al., ‘Reducing Tail Latencies in Micro-Batch Stream Processing Systems’, In <i>Proceedings of the ACM Symposium on Cloud Computing</i>. 2017.</li><li>• <b>Faria Kalim</b>, Shadi Noghabi, Shiv Verma, ‘To Edge or Not to Edge?’, In <i>Proceedings of the ACM Symposium on Cloud Computing</i>. 2017.</li></ul>	
INTERNSHIPS	<b>Software Engineering Intern, Real-Time Compute Team, <a href="#">Twitter</a></b> <ul style="list-style-type: none"><li>• I designed and evaluated the resource management aspects of Caladrius, a system that predicts the future traffic rates of <a href="#">Heron</a> jobs and preemptively scales them to prevent resource bottlenecks.</li></ul> <b>Research Intern, Cloud Container Operating System Project, <a href="#">IBM Research</a></b> <ul style="list-style-type: none"><li>• Optimized the scheduler in Spark Streaming to prevent load imbalances and mitigate stragglers.</li></ul> <b>Software Engineering Intern, Site Reliability Engineering Team, <a href="#">Uber</a></b> <ul style="list-style-type: none"><li>• 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.</li></ul>	Summer 2018  Summer 2017  Summer 2016

SERVICE	EuroSys 2019 Shadow PC External Reviewer: DSN 2019, IEEE Access	<b>Fall 2018</b>
SELECT HONORS AND AWARDS	<ul style="list-style-type: none"> <li>• <a href="#">Sohaib and Sara Abbasi Fellowship</a>, Fall 2015 – present</li> <li>• Recipient of the Usenix Student Grant, ATC 2017</li> <li>• Selected by <a href="#">CS @ Illinois</a> to receive travel funding for the 2017 Richard Tapia Celebration</li> <li>• Selected to join <a href="#">Tau Beta Pi</a>, the oldest engineering honor society in the US, Fall 2015 — present</li> <li>• Recipient of President’s Gold Medal for academic excellence in undergraduate studies, 2015</li> <li>• NUST Scholarship for all semesters since admission in undergraduate studies, Fall 2011 – Fall 2014</li> </ul>	
SYSTEMS AND SOFTWARE SKILLS	<ul style="list-style-type: none"> <li>• Programming Languages (in decreasing order of proficiency): Java, C++, Python, Go, Scala</li> <li>• Programming Models: OpenMP, MPI, Android fundamentals</li> <li>• Frameworks: Apache Storm, Apache Heron, Apache Spark</li> </ul>	
TEACHING EXPERIENCE	<b>Graduate Teaching Assistant</b> <ul style="list-style-type: none"> <li>• CS425 – Distributed Systems</li> <li>• As Head-TA of the course, I volunteered to teach a short overview of Apache Spark, which was later also included in the <a href="#">Coursera version</a> of the course.</li> </ul>	<b>Fall 2017, Fall 2018</b>