

Archit Gajjar

CONTACT INFO	Address: MRC Room No. 438 (Desk4), NC State Uni., Raleigh, NC 27606 Email: amgajjar@ncsu.edu / GajjarA7402@uhcl.edu Website: www.architgajjar.com
RESEARCH INTERESTS	<ul style="list-style-type: none">• VLSI, ASIC/FPGA, IoT, Embedded Systems Hardware Design• Mixed-Criticality System on HW/SW Codesign• Energy-Quality (E-Q) Tradeoff on ASIC/FPGA Design• Approximate Design on Fog/Edge System
EDUCATION	<p>North Carolina State University, Raleigh, NC August 2019 – May 2024 Ph.D., Computer Engineering</p> <p>University of Houston - Clear Lake (UHCL), Houston, TX May 2019 M.S., Computer Engineering</p> <ul style="list-style-type: none">• Thesis: IoT-Edge-Server Based Embedded System For Wide-Range Habitats• Advisor: Xiaokun Yang, Ph.D. <p>Dhirubhai Ambani Institute of Information and Communication Technology (DAIICT), Gujarat, India December 2016 B.Tech., Information and Communication Technology</p> <ul style="list-style-type: none">• Project: Low-Cost Security System Using Off the Shelf Components• Advisor: Biswajit Mishra, Ph.D.
WORK EXPERIENCE	<p>Graduate Teaching & Research Assistant August 2019 – Present Fundamentals of Logic Design Department of ECE, NC State University</p> <p>Graduate Teaching Fellow & Research Assistant January 2019 – May 2019 Lab for Computer Architecture Department of Engineering, UHCL</p> <p>Research & Teaching Assistant August 2017 – December 2018 Electronics, Lab for Electronics, Advanced Digital System Design, Computer Architecture & Lab for Computer Architecture Department of Engineering, UHCL</p> <p>System Developer Intern May 2015 – October 2015 Inweon IT Innovations Pvt. Ltd. Greater Noida, India Using Visual Studio and OpenCV, a code was developed to find the length of rice from the provided image. Later, Raspberry pi micro-controller was set up to perform the code remotely.</p> <p>Intern December 2014 – January 2015 QX KPO Services Pvt. Ltd. Ahmedabad, India For one month, gained knowledge about OSI (Open Systems Interconnection) model in the field of network and communication along with practical implementation.</p>
SKILLS	Programming Languages:

- Verilog, VHDL, Python, C, C++, HTML

Tools:

- Arduino, Keil, LTSpice, Raspberry Pi, Beagle Bone Black, OpenCV, Vim, Latex, FPGA, NI Multisim, ModelSim, MATLAB, Xilinx ISE, Vivado

- PUBLICATIONS
- (C) H. Koc, **A. Gajjar**, S. Graham, “Static Charging Scheduling of Electric Vehicles at Private Station,” 10th IEEE Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON), Accepted, 2019.
 - (C) K. Vaca, **A. Gajjar**, X. Yang, et al., “Real-Time Automatic Music Transcription (AMT) with Zync FPGA,” IEEE Computer Society Annual Symposium on VLSI (ISVLSI), Student Forum, Accepted, 2019.
 - (C) **A. Gajjar**, X. Yang, H. Koc, et al., “Mesh-IoT Based System For Large-Scale Environment,” 5th Annual Conf. on Computational Science & Computational Intelligence (CSCI2018), Accepted , In Press, 2018. (**Acceptance Rate: 23.00%**)
 - (J) X. Yang, L. Wu, **A. Gajjar**, et al., “A Vision of Fog Systems with Integrating FPGAs and BLE Mesh Network,” Journal of Communications (ISSN: 1796-2021), Vol. 14, No. 3, pp. 210-215, 2019.
 - (C) **A. Gajjar**, X. Yang, et al., “An FPGA Synthesis of Face Detection Algorithm using HAAR Classifiers,” Intl. Conference on Algorithms, Computing, and Systems (ICACS2018), PP.133-137, July 27-29, Beijing China, 2018.
 - (C) Y. Zhang, X. Yang, **A. Gajjar**, et al., “Exploring Slice-Energy Saving on An Video Processing FPGA Platform with Approximate Computing,” Intl. Conference on Algorithms, Computing, and Systems (ICACS2018), PP.138-143, July 27-29, Beijing China, 2018.
 - (J) Y. Zhang, X. Yang, **A. Gajjar**, et al., “Hierarchical Synthesis of Approximate Multiplier Design for Field-Programmable Gate Arrays (FPGA)-CSRmesh System,” Intl. Journal of Compt. Applications (IJCA), Vol. 180, No. 17 PP. 1-7, Feb. 2018.
 - (C) **A. Gajjar**, Y. Zhang, and X. Yang, “Demo Abstract: A Smart Building System Integrated with An Edge Computing Algorithm and IoT Mesh Networks,” The Second ACM/IEEE Symposium on Edge Computing (SEC2017), Article No. 35, Oct. 2017.

- CONFERENCE
& JOURNAL
REVIEWER
- CSAE 2019
 - ICCCM 2019
 - WCSE 2019

- SERVICE TO
PROFESSION
- Secretary, Executive Officer, IEEE SB UHCL 2018 – 2019
 - Leader of Special Interest Group on Microcontrollers, IEEE SB DA-IICT
 - I’Fest, Mentor, IEEE SB DAIICT
 - TENSYP’15 Volunteer, Region 10 IEEE International Conference, India
 - I’Fest, Event Coordinator
 - Teaching Assistant, Workshop on Embedded System and Arduino, PDPU, India

EVENT PRESENTATIONS	<ul style="list-style-type: none"> • A. Gajjar, “IoT-Edge-Server Based Embedded System For Wide-Range Habitats,” Student’s Day, IEEE SB UHCL, April 2019. • A. Gajjar, X. Yang, et al., “Mesh-IoT Based Smart and Secure Monitoring System for Wide-Range Territory,” IEEE Innovation and Automation Conference, Gilruth Recreation Center, NASA-JSA, Houston, November 2018. • X. Yang, Y. Zhang, A. Gajjar, H. Schmoyer, and N. Ly, “Learning-on-Chip: Facial Detection with Approximations of FPGA Computing,” Houston Robotics and AI Day, UHCL, August 2018. • A. Gajjar, X. Yang, “Poster presentation: A Wide Area IoT Mesh Network With Edge Computing,” IEEE Innovation and Automation Conference, Gilruth Recreation Center, NASA., October 2017. • A. Gajjar, X. Yang, “Poster presentation: A Smart Home/Building System Integrated with An Edge Computing Algorithm and CSRMesh Networks,” Houston Robotics and AI Day, July 2017.
ACADEMIC PROJECTS	<ul style="list-style-type: none"> • Low Cost Security System Using Off the Shelf Components January 2016 – April 2016 A security system capturing image of an intruder and informing to the designated person. • Research Intern May 2016 – July 2016 Gained knowledge of Cadence Encounter, tickle files, optimization. • Surveillance Bot January 2015 – April 2015 A live video stream from a manually controlled surveillance robot. • 5-Stage Pipeline processor July 2014 – November 2014 Basic 5-stage pipelined processor development.
HONORS & AWARDS	<ul style="list-style-type: none"> • Full Scholarship, GSSP, NC State University, Fall 2019 & Spring 2020 • Outstanding Computer Engineering Graduate Student Award, UHCL, 2019 • Member, The National Society of Leadership and Success, August 2018 (Invited) • Research Scholarship Award (\$1300), Dr. Ted Leibfried Legacy, UHCL, July 2018 (2/100 Students) • Graduate Student Ambassador, College of Science & Engineering, UHCL, 2018 (2 Students out of CENG Program) • Member, Phi Kappa Phi Honor Society, UHCL, April 2018 (Invited) • Research/Teaching Assistant Scholarship, UHCL, 2017-2018 • NSF Student Travel Grant Award (\$800), SEC, 2017 • Leadership Honor, Omicron Delta Kappa(ODK), Hilary Jo Karp Circle Honor Society, November 2017
VOLUNTEER EXPERIENCE	<ul style="list-style-type: none"> • International Student Orientation Leader, UHCL 2017 & 2018 • Chairperson, Hostel Management Committee, DAIICT 2015 • Member, Anti-Ragging Committee, DAIICT 2015 & 2016 • Member, Hostel Management Committee, DAIICT 2013 & 2014