

Khizar Anjum

CONTACT INFORMATION	CPS Lab , CoRE 629 Department of Electrical and Computer Engineering Rutgers University New Brunswick, NJ	E-mail: khizaranjum28@gmail.com khizar.anjum@rutgers.edu Mobile: +1-908-963-7363 Github ID: khizar-anjum , LinkedIn ID: khizar-anjum
RESEARCH INTERESTS	HW/SW Co-design, Continual Learning, Reinforcement Learning, Vision-based Autonomous Navigation, Computer Vision, Situational Awareness	
EDUCATION	Rutgers University, New Brunswick, NJ PhD student, Electrical and Computer Engineering (ECE) 2019 – 2024 (expected) Grade Point Average (GPA): 3.86/4 <i>Advised by</i> Dr. Dario Pompili Rutgers University, New Brunswick, NJ Masters of Science (MS), Electrical and Computer Engineering (ECE) 2019 – 2021 Grade Point Average (GPA): 3.86/4 <i>Advised by</i> Dr. Dario Pompili Lahore University of Management Sciences (LUMS), Lahore, Pakistan <i>Bachelor of Science (BS)</i> , Electrical Engineering (EE) Gold Medalist , 2015 - 2019 Grade Point Average (GPA): 3.86/4 <i>Advised by</i> Dr. Muhammad Tahir and Dr. Momin Uppal	
JOURNAL PUBLICATIONS	K. Anjum , P. Pandey, V. Sadhu, R. Tron and D. Pompili. “Online Object Detection on Resource-Constrained Mobile Robots via Approximate Computing”. <i>IEEE Transactions on Multimedia</i> , 2021 (under review)	
CONFERENCE PUBLICATIONS	K. Anjum , B. Zhang, D. Pompili and B. Yuan. “Context-Aware HW/SW Co-design in Heterogeneous Devices via Partial Reconfiguration of FPGAs”, <i>ACM International Symposium on Mobile Ad Hoc Networking and Computing (Mobihoc)</i> , 2022. (under review) S. Yang, K. Anjum , B. Yuan and D. Pompili. “Filter/Depth-wise Independence Score for Pruning 3D Convolutional Neural Networks”, <i>European Conference on Computer Vision (ECCV)</i> , 2022. (under review) K. Anjum , V. Sadhu and D. Pompili. “ContextBots: Context-aware Framework for Real-time Robust Inference on Aerial Robots”. <i>IEEE International Conference on Intelligent Robots and Systems (IROS)</i> , 2022. (under review) Y. Hsieh, K. Anjum , S. Huang, I. Kulkarni and D. Pompili. “Hybrid Analog-Digital Sensing Approach for Low-power Real-time Anomaly Detection in Drone”. <i>IEEE 18th International Conference on Mobile Ad Hoc and Sensor Systems (MASS)</i> , 2021. Y. Hsieh, K. Anjum , S. Huang, I. Kulkarni and D. Pompili. “Neural Network Design via Voltage-based Resistive Processing Unit and Diode Activation Function - A New Architecture”. <i>64th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)</i> , 2021. [ResearchGate] K. Anjum , V. Sadhu and D. Pompili. “Multi-UAV Situational Awareness via Distributed and Approximate Computing Techniques”. <i>IEEE 17th International Conference on Mobile Ad Hoc and Sensor Systems (MASS)</i> , 2020. [IEEE Xplore]	
RESEARCH POSITIONS	Graduate Research Assistant Dec. 2019 – Present CPS Lab , CoRE 629, Rutgers University, New Brunswick, NJ Advisor: Dr. Dario Pompili Research Assistant June 2018 – May 2019 Department of Electrical Engineering, LUMS, Lahore, Pakistan Advisors: Dr. Muhammad Tahir and Dr. Momin Uppal	
TEACHING EXPERIENCE	ECE Graduate Teaching Assistant, Rutgers University Sept. 2019 – Dec. 2019 Linear Signals and Systems (ECE345), Fall 2019 Instructor: Dr. Anand Sarwate Teaching Assistant, LUMS, Lahore, Pakistan Aug. 2017 – May 2018 Worked as a Teaching Assistant for 3 different courses in this time period: <ul style="list-style-type: none">• Signals and Systems - EE 310 by Dr. Momin Uppal• Circuits 2 - EE 241 by Dr. Muhammad Tahir• Intro to Engineering Modelling - EE 241 by Dr. Tariq Jadoon	

RELEVANT GRADUATE COURSES	<p>Deep Learning (<i>CS/ECE</i>) Machine Vision; Machine Learning for IOT; Deep Learning; Introduction to Data Science</p> <p>Statistical Learning and Optimization (<i>CS/ECE</i>) Machine Learning and Information Theory; Convex Optimization; Reinforcement Learning</p> <p>Computer Engineering (<i>ECE</i>) Introduction to Computational Robotics; Introduction to Parallel and Distributed Computing; Introduction to Computer Systems; Data Structures and Algorithms</p> <p>Probability theory and Signal Processing (<i>ECE</i>) Detection and Estimation Theory; Signals and Systems; Stochastic Systems; Digital Signal Processing; Advanced Digital Signal Processing</p>		
GRADUATE PROJECTS	<p>High-Performance Parallel Graph Search using CUDA Jan. 2021 – May 2021 <i>Advised by Dr. Maria Striki</i> Explored and implemented highly parallelized versions of graph search algorithms such as Bellman-Ford, Dijkstra and A-star algorithms. [report] [codes]</p> <p>Deep Multi-Agent RL for 3D Reconstruction Sept. 2019 – Dec. 2019 <i>Advised by Dr. Dario Pompili in cooperation with Dr. Jorge Ortiz</i> Worked on multi-agent reinforcement learning algorithm to guide flying drones navigate a scene and reconstruct 3D model. [report] [codes]</p> <p>Signature Extraction and Verification Using Siamese CNNs June 2019 – Aug. 2019 Worked on signature extraction and verification from documents using Siamese Convolutional Neural Networks and OpenCV. [report] [codes]</p> <p>Deep Neural Networks for Early Diagnosis of Parkinson’s Disease June 2018 – May 2019 <i>Advised by Dr. Muhammad Tahir and Dr. Momin Uppal</i> Analysis of Smartphone Parkinson’s disease data released by Sage Bionetworks to train neural networks to use for early detection of Parkinson’s. [report] [codes]</p>		
PROFESSIONAL SERVICES	<p>Reviewer - IEEE Transactions on Mobile Computing (TMC); IEEE Pervasive and Mobile Computing (PMC) Journal</p>		
TECHNICAL SKILLS	<p>Programming Languages – Python, MATLAB, C++, C, CUDA, Bash</p> <p>Operating Systems – Linux, Windows</p> <p>Other Tools – L^AT_EX, Jupyter, PyTorch, TensorFlow, ROS, Pandas, GNU Radio, OpenCV</p>		
SCHOLASTIC ACHIEVEMENTS	<p>Awarded TA Achievement Award of the Year at Rutgers, 2020 (Based on Student Instructional Survey (SIRS) conducted by CTAAR, Rutgers)</p> <p>Awarded National Management Foundation (NMF) Gold Medal Award at Lahore University of Management Sciences (LUMS) for outstanding performance among ~4k students</p> <p>Dean’s Honor List at LUMS, Awarded Every Year for 2016–2019</p> <p>National Outreach Program (NOP) Scholarship Award for study at LUMS</p> <p>Merit-based Excellence Scholarship Award at Punjab College, Okara</p> <p>Shahbaz Sharif Youth Scholarship Award, 2014</p>		
REFERENCES	<table border="0"> <tr> <td> <p>Prof. Dario Pompili pompili@rutgers.edu Department of Electrical & Computer Engineering, Rutgers University, New Brunswick, NJ.</p> <p>Prof. Momin Uppal momin.uppal@lums.edu.pk Department of Electrical Engineering, LUMS, Lahore, Pakistan.</p> </td> <td> <p>Prof. Muhammad Tahir tahir@lums.edu.pk Department of Electrical Engineering, LUMS, Lahore, Pakistan.</p> <p>Prof. Saman Zonouz saman.zonouz@rutgers.edu Department of Electrical & Computer Engineering, Rutgers University, New Brunswick, NJ.</p> </td> </tr> </table>	<p>Prof. Dario Pompili pompili@rutgers.edu Department of Electrical & Computer Engineering, Rutgers University, New Brunswick, NJ.</p> <p>Prof. Momin Uppal momin.uppal@lums.edu.pk Department of Electrical Engineering, LUMS, Lahore, Pakistan.</p>	<p>Prof. Muhammad Tahir tahir@lums.edu.pk Department of Electrical Engineering, LUMS, Lahore, Pakistan.</p> <p>Prof. Saman Zonouz saman.zonouz@rutgers.edu Department of Electrical & Computer Engineering, Rutgers University, New Brunswick, NJ.</p>
<p>Prof. Dario Pompili pompili@rutgers.edu Department of Electrical & Computer Engineering, Rutgers University, New Brunswick, NJ.</p> <p>Prof. Momin Uppal momin.uppal@lums.edu.pk Department of Electrical Engineering, LUMS, Lahore, Pakistan.</p>	<p>Prof. Muhammad Tahir tahir@lums.edu.pk Department of Electrical Engineering, LUMS, Lahore, Pakistan.</p> <p>Prof. Saman Zonouz saman.zonouz@rutgers.edu Department of Electrical & Computer Engineering, Rutgers University, New Brunswick, NJ.</p>		