

# Aizaz Sharif

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## EDUCATION

<b>Ph.D. Computer Science</b> Simula Research Laboratory, Norway	February 2020-To Date
<b>M.Sc. Computer Science</b> FAST NUCES, Pakistan – GPA: 3.61/4.00	August 2017-July 2019
<b>Deep Learning Nanodegree</b> Udacity	January 2017-July 2017
<b>B.Sc. Computer Science</b> FAST NUCES, Pakistan – GPA: 3.84/4.00	August 2012-May 2016

## PUBLICATIONS

<b>ReMAV: Reward Modeling of Autonomous Vehicles for Finding Likely Failure Events</b>	
• <b>Submitted:</b> IEEE Transactions on Software Engineering (TSE)	August 2023
<b>Evaluating the Robustness of Deep Reinforcement Learning for Autonomous Policies in a Multi-agent Urban Driving Environment</b>	
• <b>Published:</b> 22nd IEEE International Conference on Software Quality, Reliability, and Security (QRS), China	November 2022
<b>Adversarial Deep Reinforcement Learning for Improving the Robustness of Multi-agent Autonomous Driving Policies</b>	
• <b>Published:</b> 29th Asia-Pacific Software Engineering Conference (APSEC), Japan	August 2022
<b>DeepOrder: Deep Learning for Test Case Prioritization in Continuous Integration Testing</b>	
• <b>Published:</b> 37 <sup>th</sup> International Conference on Software Maintenance and Evolution (ICSME), Luxembourg	September 2021
<b>Function Identification in Android Binaries Using Deep Learning</b>	
• <b>Published:</b> 7 <sup>th</sup> International Symposium on Computing and Networking (CANDAR), Japan	January 2020
<b>Android Malware Detection through Generative Adversarial Networks</b>	
• <b>Published:</b> Transactions on Emerging Telecommunications Technologies	July 2019

## WORK EXPERIENCE

<b>Simula Research Laboratory, Norway</b> – Ph.D. Researcher	February 2020-To Date
<ul style="list-style-type: none"><li>Thesis Title: Testing and Validation of Autonomous Driving Systems</li><li>Joined as a Ph.D. Researcher in the ‘Department of Validation Intelligence for Autonomous Software Systems’.</li><li>Currently involved in research areas related to testing autonomous driving models in single and multi-agent simulated environments.</li><li>Using deep reinforcement learning for evaluating their robustness as autonomous and adversarial driving agents.</li></ul>	
<b>National Center for Cyber Security (NCCS), Pakistan</b> – Research Associate	February 2019-January 2020
<ul style="list-style-type: none"><li>Lead a small team of software developers for the ‘Mobile Phone Digital Forensics’ toolkit.</li><li>Learned Mobile Forensic concepts in 2 months and highlighted the challenges faced during the criminal investigations.</li><li>Implemented a Python based Flask backend for REST API calls of the user interface and SQLite for Android device databases.</li><li>Constructed a web application for the acquisition, analysis, and reporting of Android devices for criminal investigation</li><li>Maintained a Software workflow that was released to the authorities for beta testing.</li></ul>	
<b>FAST NUCES, Pakistan</b> – Research Assistant	September 2017-February 2019
<ul style="list-style-type: none"><li>Worked under ‘Colab’ Research group for the campus.</li><li>Involved in research areas related to GANs, Android Malware Detection, Graph Theory, and Medical Imaging.</li><li>Co-wrote and published a paper in ‘Transactions on Emerging Telecommunications Technologies’ Journal.</li></ul>	
<b>DCUBE Technologies, Pakistan</b> - Software Engineer	April 2017-June 2017
<ul style="list-style-type: none"><li>Worked under the ‘Product Innovation and Strategy’ team.</li><li>Integrated state-of-the-art OCR libraries in 1 month to an ongoing C++ based large scale library for live deployment.</li><li>Increased the accuracy of the OCR prediction by 10% along with performance optimization.</li><li>Gained skills in OCR Pipeline, Python Linux Shell Scripting, Computer Vision and Deep Learning.</li></ul>	
<b>Techlogix, Pakistan</b> – Software Engineer	October 2016-April 2017
<ul style="list-style-type: none"><li>Worked as a Software Engineer for the implementation and support of FLEXCUBE which is Oracle’s Universal Banking Solution.</li><li>Implemented a workflow using PL/SQL for a smooth migration process from old to the proposed Oracle Solution under strict deadlines.</li><li>Provided continuous support to the migrated system for running daily ongoing transactions with ease.</li></ul>	
<b>Nextbridge (Pvt) Ltd.</b> - Software Engineer Intern	July 2016-October 2016
<ul style="list-style-type: none"><li>Worked as Intern under the program “Web Development Training”.</li><li>Captured basics on PHP and Javascript frameworks including Laravel, Angular, Nodejs and MongoDB for a complete MVC based Web application.</li></ul>	

## KEY PROJECTS

<b>ReMAV: Reward Modeling of Autonomous Vehicles for Finding Likely Failure Events</b> ( <a href="#">GitHub</a> )	August 2023
<b>Adversarial Deep Reinforcement Learning for Improving the Robustness of Multi-agent Autonomous Driving Policies</b> ( <a href="#">GitHub</a> )	August 2022
<b>DeepOrder: Deep Learning for Test Case Prioritization in Continuous Integration Testing</b> ( <a href="#">GitHub</a> )	August 2021
<b>Handwriting Generation using Recurrent Neural Networks</b> ( <a href="#">GitHub</a> )	June 2018

## COUNTRIES VISITED

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<b>Norway</b> - As a PhD Candidate at Simula Research Laboratory, Norway	February 2020
<b>Japan</b> – For presentation of a paper at 7 <sup>th</sup> International Symposium on Computing and Networking (CANDAR), Japan	November 2019

## TECHNICAL SKILLS

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**Programming Languages:** Python, JAVA, C++/C, JavaScript, Go, Bash

**Machine Learning:** Supervised Learning, Generative Models, Deep Learning, NLP, Deep Reinforcement Learning

**Tools/Libraries:** PyTorch, OpenCV, Tensorflow, Keras, Ray RLlib, Carla, OpenAI Gym, NodeJs, Git, CUDA, Flask, LaTeX

## KEY ACHIEVEMENTS & AWARDS

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<b>CANDAR Outstanding Paper</b> - 7 <sup>th</sup> International Symposium on Computing and Networking (CANDAR), Japan	November 2019
<b>1x Bronze Medal</b> - FAST NUCES, Pakistan	October 2019
<b>7x Gold Medals and 1x Silver Medal</b> -FAST NUCES, Pakistan	August2012-May2016
<b>7x Deans List and 1x Rector List Certifications</b> -FAST NUCES, Pakistan	August2012-May2016