

Adnan Rashid

Assistant Professor  
School of Electrical Engineering and Computer Science

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About

Dr. Adnan Rashid is working as Assistant Professor in the School of Electrical Engineering and Computer Science. Dr. Adnan Rashid has a PhD in Formal Methods. Dr. Adnan Rashid has published 33 research articles & conference papers having a citation count of 139, carried out 0 projects and filed 0 intellectual property.

Qualifications

PhD in Formal Methods	2014 - 2019
NUST, Islamabad , Pakistan	
MPhil in Wireless Communication	2010 - 2012
Quaid-i-Azam University , Pakistan	
MSc in Electronics	2006 - 2008
Quaid-i-Azam University , Pakistan	
BSc in Math A Math B Physics	2004 - 2006
University of the Punjab , Pakistan	

Experience

Assistant Professor	2023- Present
School of Electrical Engineering and Computer Science	
Assistant Professor	2022 - 2023
School of Electrical Engineering and Computer Science	
Assistant Professor	2020 - 2022
School of Electrical Engineering and Computer Science	
Temporary Visiting Faculty	2020 - 2020
NUST School of Electrical Engineering and Computer Science (SEECS) , NUST School of Electrical Engineering and Computer Science (SEECS)	
Research Associate	2019 - 2020
System Analysis and Verification (SAVe) Lab, NUST-SEECS , System Analysis and Verification (SAVe) Lab, NUST-SEECS	
Visiting Researcher	2017 - 2018
Concordia University, Canada , Concordia University, Canada	
Research Assistant	2013 - 2019
System Analysis and Verification (SAVe) Lab, NUST-SEECS , System Analysis and Verification (SAVe) Lab, NUST-SEECS	

Awards

SAVe Lab Best Researcher  
I was awarded for best researcher in the year 2018 in System Analysis and Verification (SAVe) Lab.

Research Articles

Formal Verification of Universal Numbers using Theorem Proving	2024
Adnan Rashid Ayesha Gauhar Osman Hassan Sa'ed Abed Imtiaz Ahmad	
Journal of Electronic Testing, Pages 1-17	
Impact Factor: 1.100   Quartile: 4   Citations: 1	
DOI: 10.1007/s10836-024-06123-9	
Formalization of the Telegrapher's Equations using Higher-Order-Logic Theorem Proving	2024

<p><i>Elif Deniz Adnan Rashid Osman Hassan Sofiene Tahar</i>  <i>Journal of Applied Logics</i> , Volume 11, Issue 2, Pages 197-236</p> <p><b>Impact Factor:</b> 0.400   <b>Quartile:</b> 4  <b>DOI:</b> 978-1-84890-456-9</p>	
<p><b>Formalization of bond graph using higher-order-logic theorem proving</b></p> <p><i>Ujala Qasim Adnan Rashid Osman Hasan</i>  <i>ISA Transactions</i> , Volume 128, Part B, Pages 453-469</p> <p><b>Impact Factor:</b> 5.468   <b>Quartile:</b> 1   <b>Citations:</b> 2  <b>DOI:</b> 10.1016/j.isatra.2021.11.042</p>	2022
<p><b>Formal analysis of 2D image processing filters using higher-order logic theorem proving</b></p> <p><i>Adnan Rashid Sa'ed Abed Osman Hasan</i>  <i>EURASIP Journal on Advances in Signal Processing</i>, Volume 2022, Article Number 53</p> <p><b>Impact Factor:</b> 1.759   <b>Quartile:</b> 3  <b>DOI:</b> 10.1186/s13634-022-00882-3</p>	2022
<p><b>Towards the formal performance analysis of multistate coherent systems using HOL theorem proving</b></p> <p><i>Shahid Ali Murtza Waqar Ahmed Adnan Rashid Osman Hasan</i>  <i>Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability</i>, Pages 1-15</p> <p><b>Impact Factor:</b> 1.891   <b>Quartile:</b> 3  <b>DOI:</b> 10.1177/1748006X221074441</p>	2022
<p><b>Formal verification of Matrix based MATLAB models using interactive theorem proving</b></p> <p><i>Ayesha Gauhar Adnan Rashid Osman Hasan Joao Bispo Joao M.P. Cardoso</i>  <i>PeerJ Computer Science</i> , Volume 7, Article Number e440</p> <p><b>Impact Factor:</b> 2.411   <b>Quartile:</b> 2   <b>Citations:</b> 4  <b>DOI:</b> 10.7717/peerj-cs.440</p>	2021
<p><b>Formal Analysis of the Continuous Dynamics of Cyber-physical Systems using Theorem Proving</b></p> <p><i>Adnan Rashid Osman Hasan</i>  <i>Journal of Systems Architecture</i> , Volume 112, Article Number 101850</p> <p><b>Impact Factor:</b> 5.836   <b>Quartile:</b> 1   <b>Citations:</b> 11  <b>DOI:</b> 10.1016/j.sysarc.2020.101850</p>	2021
<p><b>Formal Reasoning about Synthetic Biology using Higher-order-logic Theorem Proving</b></p> <p><i>Sa'ed Abed Osman Hasan Adnan Rashid</i>  <i>IET Systems Biology</i> , Volume 14, Issue 5, Pages 271-283</p> <p><b>Impact Factor:</b> 1.615   <b>Quartile:</b> 4   <b>Citations:</b> 4  <b>DOI:</b> 10.1049/iet-syb.2020.0026</p>	2020
<p><b>Formal Analysis of Unmanned Aerial Vehicles using Higher-order-logic Theorem Proving</b></p> <p><i>Saed Abed Adnan Rashid Osman Hasan</i>  <i>Journal of Aerospace Information Systems</i>, Pages 1-15</p> <p><b>Impact Factor:</b> 1.185   <b>Quartile:</b> 3   <b>Citations:</b> 7  <b>DOI:</b> 10.2514/1.1010730</p>	2020
<p><b>Formal Verification of Robotic Cell Injection Systems upto 4-DOF using HOL Light</b></p> <p><i>Adnan Rashid Osman Hasan</i>  <i>Formal Aspects of Computing</i> , Pages 1-22</p> <p><b>Impact Factor:</b> 0.627   <b>Quartile:</b> 4   <b>Citations:</b> 5  <b>DOI:</b> 10.1007/s00165-020-00514-3</p>	2020
<p><b>Toward the Formalization of Macroscopic Models of Traffic Flow Using Higher-Order-Logic Theorem Proving</b></p> <p><i>Adnan Rashid Muhammad Umair Osman Hasan Mohamed H. Zaki</i>  <i>IEEE Access</i> , Vol.8(1), Pages 27291-27307</p> <p><b>Impact Factor:</b> 3.367   <b>Quartile:</b> 2   <b>Citations:</b> 2  <b>DOI:</b> 10.1109/ACCESS.2020.2971661</p>	2020
<p><b>Wearable technologies for hand joints monitoring for rehabilitation: A survey</b></p> <p><i>Adnan Rashid Osman Hasan</i>  <i>Microelectronics Journal</i> , Volume: 88, Pages: 173-183</p> <p><b>Impact Factor:</b> 1.405   <b>Quartile:</b> 3   <b>Citations:</b> 83  <b>DOI:</b> 10.1016/j.mejo.2018.01.014</p>	2019

<b>Formal Analysis of Continuous-time Systems using Fourier Transform</b> <i>Adnan Rashid Osman Hasan</i> <i>Journal of Symbolic Computation</i> , Volume 90, Pages 65-88 <b>Impact Factor:</b> 0.673   <b>Quartile:</b> 4   <b>Citations:</b> 10 <b>DOI:</b> 10.1016/j.jsc.2018.04.004	2019
<b>Formalization of Lerch's Theorem using HOL Light</b> <i>Adnan Rashid Osman Hasan</i> <i>Journal of Applied Logics-IFCOLOG Journal of Logics and Their Applications</i> , Volume: 5, Issue: 8, Pages1623-1652 <b>Impact Factor:</b> - <b>DOI:</b> NA	2018
<b>Formal reasoning about systems biology using theorem proving</b> <i>Adnan Rashid Osman Hasan Umair Siddique Sofiène Tahar</i> <i>PLoS ONE</i> , Volume: 12 Issue: 7 Article Number: e0180179 <b>Impact Factor:</b> 2.766   <b>Quartile:</b> 1   <b>Citations:</b> 8 <b>DOI:</b> 10.1371/journal.pone.0180179	2017
<b>Conference Proceedings</b>	
<b>Formal Stability Analysis of Two-Dimensional Digital Image Processing Filters</b> <i>Adnan Rashid Sa'ed Abed Osman Hassan</i> <i>International Congress on Information and Communication Technology, ICICT 2023</i> , res.country(231.) <b>Citations:</b> N/A <b>DOI:</b> 10.1007/978-981-99-3243-6_47	2023
<b>Anti-social Behavior Detection using Multi-lingual Model</b> <i>Adnan Rashid Hafiz Zeeshan Ali</i> <i>2023 4th International Conference on Advancements in Computational Sciences (ICACS)</i> , res.country(177.) <b>Citations:</b> N/A <b>DOI:</b> 10.1109/ICACS55311.2023.10089659	2023
<b>On the Formalization of the Heat Conduction Problem in HOL</b> <i>Adnan Rashid Elif Osman Hassan Sofiene Tahar</i> <i>Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)</i> res.country(78.) <b>Citations:</b> N/A <b>DOI:</b> 10.1007/978-3-031-16681-5_2	2022
<b>FASiM: A Framework for Automatic Formal Analysis of Simulink Models of Linear Analog Circuits</b> <i>Adnan Rashid Ayesha Gauhar Osman Hasan</i> <i>14th Annual IEEE International Systems Conference</i> , res.country(38.) <b>Citations:</b> N/A <b>DOI:</b> 10.1109/SysCon47679.2020.9353652	2020
<b>Formal Analysis of the Biological Circuits using Higher-order-logic Theorem Proving</b> <i>Sa'ed Abed Adnan Rashid Osman Hasan</i> <i>The 35th ACM/SIGAPP Symposium On Applied Computing</i> , res.country(56.) <b>Citations:</b> N/A <b>DOI:</b> 10.1145/3341105.3373993	2020
<b>Formal Verification of Cyber-Physical Systems using Theorem Proving</b> <i>Adnan Rashid Umair Siddique Sofiène Tahar</i> <i>7th International Workshop on Formal Techniques for Safety-Critical Systems</i> , res.country(48.) <b>Citations:</b> N/A <b>DOI:</b> 10.1007/978-3-030-46902-3_1	2019
<b>Formal Modeling of Robotic Cell Injection Systems in Higher-order Logic</b> <i>Adnan Rashid Osman Hasan</i> <i>1st Workshop on Formal Verification of Physical Systems</i> , res.country(12.) <b>Citations:</b> N/A <b>DOI:</b> Paper 33	2018
<b>Formal Verification of Platoon Control Strategies</b> <i>Adnan Rashid U. Siddique Osman Hasan</i> <i>International Conference on Software Engineering and Formal Methods SEFM 2018</i> , res.country(75.)	2018

- Citations:** N/A  
**DOI:** 10.1007/978-3-319-92970-5\_14
- Formal Analysis of Linear Control Systems Using Theorem Proving** 2017  
*Adnan Rashid Osman Hasan*  
*19th International Conference on Formal Engineering Methods (ICFEM-2017)*, res.country(48,)  
**Citations:** N/A  
**DOI:** 10.1007/978-3-319-68690-5\_21
- Formal Analysis of Robotic Cell Injection Systems Using Theorem Proving** 2017  
*Adnan Rashid Osman Hasan*  
*7th International Workshop on Design, Modeling, and Evaluation of Cyber Physical Systems*, res.country(121,)  
**Citations:** N/A  
**DOI:** 10.1007/978-3-030-17910-6\_10
- Formalization of Transforms Methods in HOL Light** 2017  
*Adnan Rashid Osman Hasan*  
*10th Conference on Intelligent Computer Mathematics*, res.country(231,)  
**Citations:** N/A  
**DOI:** 10.1007/978-3-319-62075-6\_22
- Formalization of Transform Methods using HOL Light** 2017  
*Osman Hassan Adnan Rashid*  
*10th Conference on Intelligent Computer Mathematics held from 17-21 Jul 2017 in Scotland*, res.country(231,)  
**Citations:** N/A
- On the Formalization of Fourier Transform in Higher-order Logic** 2016  
*Adnan Rashid Osman Hasan*  
*7th International Conference on Interactive Theorem Proving*, res.country(75,)  
**Citations:** N/A  
**DOI:** 10.1007/978-3-319-43144-4\_31
- Formal analysis of a ZigBee-based routing protocol for smart grids using UPPAAL** 2015  
*Adnan Rashid Kashif Saghar Osman Hasan*  
*12th International Conference on High-capacity Optical Networks and Enabling/Emerging Technologies*, res.country(177,)  
**Citations:** N/A  
**DOI:** 10.1109/HONET.2015.7395420
- Analysis of Weather Forecasting Model in PRISM** 2014  
*Asad Ahmed Adnan Rashid Sohail Iqbal*  
*12th International Conference on Frontiers of Information Technology*, res.country(177,)  
**Citations:** N/A  
**DOI:** 10.1109/FIT.2014.73

## Book Chapters

- Using an Interactive Theorem Prover for Formally Analyzing the Dynamics of the Unmanned Aerial Vehicles** 2023  
*Adnan Rashid Osman Hassan Saed Abed*  
In: *Book on Studies in Computational Intelligence*, Chapter 9, Volume 1090, Pages 253-282  
**Citations:** 2  
**DOI:** [https://doi.org/10.1007/978-3-031-26564-8\\_9](https://doi.org/10.1007/978-3-031-26564-8_9)
- Formal Verification of ZigBee-based Routing Protocol for Smart Grids** 2020  
*Adnan Rashid Osman Hasan*  
In: *Book on Encyclopedia of Information Science and Technology, Fifth Edition*, Chapter 69, Pages 1002-1017  
**Citations:** N/A  
**DOI:** 10.4018/978-1-7998-3479-3.ch069
- Formal Verification of Robotic Cell Injection Systems** 2019  
*Adnan Rashid Osman Hasan Iram Tariq Bhatti*  
In: *Control Systems Design of Bio-Robotics and Bio-mechatronic with advanced applications*, Chapter 20  
**Citations:** N/A  
**DOI:** <https://doi.org/10.1016/B978-0-12-817463-0.00005-8>

## Editorial Activities

[illegible]

Reviewed Papers for Journals <b>Impact Factor: 0</b>	2022
Reviewed Papers for Journals <b>Impact Factor: 5.468</b>	2022
Reviewed Papers for Journals <b>Impact Factor: 0</b>	2022
Reviewed Papers for Journals <b>Impact Factor: 0</b>	2022
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