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Areas of Expertise

Data Science (Big/Time-series Data Analytics), Machine Learning, Predictive Modeling, Water treatment technology and environmental impact assessment using advanced computer science approaches, Intersection of Computer and cognitive sciences

Education

2015	Entrepreneurship for Science, Medicine & Technology University of California Los Angeles (School of Management)
2008–2012	Ph.D., Computer Science, University of Bradford (UK) Thesis Title: Game Theoretic Coalitional Routing in Cooperative Vehicular Ad Hoc Networks
2012	PGCert in Higher Education Practice, University of Bradford (UK)
2008	M.Sc., Computer Science, Birmingham City University (UK)
2003–2006	M.Sc., Computer Science, COMSATS University of IT (Pakistan)

Appointments

2017–present	Assistant Researcher, Center for Environmental Implications of Nanotechnology (UC CEIN)
2013–2017	Postdoctoral Research Scholar, UC CEIN
2013	Visiting Lecturer, British Broadcasting Corporation (BBC UK)
2012–2013	Research Fellow, University of Leeds (UK)
2009–2012	Lecturer/Associate Lecturer, University of Bradford (UK)
2009–2011	Teaching Assistant, University of Bradford (UK)
2011–2012	Mobile Application Developer, Metricell Ltd. (UK)
2010–2011	Full Stack Web Developer, University of Bradford (UK)

Grants

2011	Role: Co-PI Title: Cross-Layer Investigation and Integration of Computing and Networking Aspects of Mobile Social Networks (CLIMBER)	\$650,000
2011	Role: PI Title: Tracesaver - A Unique Global Mobile Network Service Tracker and User Centric Data Analyzer	\$8,000
2010	Role: PI Title: Student Coursework Repository (SCORE) - A Learner Centered Student Coursework Management System.	\$13,000
2009	Role: PI Title: EDT portal - Student Project and Dissertation Management System Compliant with UK Higher Education Standards.	\$13,000

Working Grants

2019	Role: PI Title: A Decision Support System for nano-bio Interactions with Flexible Database Management System	\$700,000
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Teaching

2019	CHENGR100 Fundamentals of CBE	UCLA CBE
2018	Computational Modeling (Invited Speaker)	UCLA School of Public Health
2018	NanoDatabank & Nanoinformatics (Trainer)	UCLA, UCSB, UTEP
2012	COS7025-B Mobile Application Development	University of Bradford
2011	COS7023-B Internet Security & Protocols	University of Bradford
2010	COS7024-B Networks & Protocols	University of Bradford
2009	ENB3001-B Computer Communications	University of Bradford

Teaching Assistant

2010	COS7023-B, Internet Security & Protocols	University of Bradford
2010	COS7024-B Networks & Protocols	University of Bradford
2009	COS7024-B Networks & Protocols	University of Bradford
2009	COS7023-B, Internet Security & Protocols	University of Bradford
2008	ENB3001-B, Computer Communications	University of Bradford
2008	ENG1010M, Circuits and Systems	University of Bradford

Selected Honors and Awards

2017	Outstanding work of the year 2016, US Naval Research Laboratory (NRL), “meta-analysis of cellular toxicity for cadmium-containing quantum dots”.
2010	Postgraduate certificate in higher education practice (PGCHEP): University of Bradford
2007	Outstanding short paper: “Pervasive Information Systems: Designing Solutions for Pervasive Computing Environments”, Birmingham City University
2007	Commendation in Pervasive Computing: Birmingham City University
2005	Distinction in Computer Science: COMSATS University of IT (Pakistan)

Mentoring and Supervision

Ph.D.

2019	Yang Zhou	UCLA
2016–2018	Michelle Romero Fishback	UCLA
2014–2016	Kari Varin Moses, Sirikarn Surawanvijit, John Thompson, Chitrada Roy	UCLA
2010–2012	Shumaila Ansari, Muaaz Hussain, Salahed Din	University of Bradford

Masters and Undergraduate

2016–Present	Konark JS Kumar, Kanishk Kaul, M. Umar Khan, Abdullah Aleidan, Yeunha Kim, Alhad Deshpande	UCLA
2014–2017	Tiffany Nguyen, Sarah Reed-guy	UCLA
2010–2012	Muaaz Hussain, Ralph Vogt (MS), Suraj Verma (MS), Kashif Shah, Adriana Roxana, Asif Iqbal, Richard Nelms, Bamo Nadir, Farheen Mulla, Sakia Ilahi, Bogdan Dogaru, Kashif Mehmood, Sabia Amin, Mohammad Adnan, Zainab Vance	University of Bradford

Research and Development Experience

2013–2017 UCLA – UC CEIN (Assistant Researcher)

Develop research initiatives and workflows for the advancement of the use of nanotechnology in the community.

Key responsibilities:

- Lead teams of data specialists and researchers to develop a decision support system utilizing advanced machine learning and computer vision algorithms for assessing the environmental impact of engineered nanomaterials (ENMs).

- Lead teams of data specialists and researchers to develop and maintain flexible web-based database management system for storage and management of Nanomaterials Data.
- Develop and validate computational models such as BNs, Decision Trees, Self-Organizing Maps (SOMs), association rule mining using experimental data on ENMs exposure and toxicity/bioactivity
- Maintain a high-performance computing cluster with 22 nodes, 240 CPUs, and 115TB of storage; perform hardware diagnostics and troubleshooting
- Write for academic journals, conduct and participate in international workshops and presentations. Prepare to market and commercialize developed tools for government and private sector organizations

2012–2013 University of Leeds (Research Fellow)

Developed software for inferring the most probable maps of buried utilities utilizing a custom built mobile sensor laboratory in collaboration with multiple partner universities. Implemented machine learning and computer vision techniques for hypothesis extraction and automated real-time 3D map (re)construction.

Key responsibilities:

- Constructed a multi-sensor mobile laboratory for underground field data collection and management in collaboration with a multidisciplinary team
- Used AI techniques such as Unsupervised Learning, Deep Neural Networks, Bayesian Mapping models and Markov Chain Monte Carlo (MCMC) simulations to (re)construct most probable 3D maps of buried utilities
- Partnered with peer institutions for data collection and joint research initiatives and hosted symposia to present research findings

2008–2012 University of Bradford (Ph.D. Candidate)

Studied the importance of vehicular communication for advancing safer driving and designing proof of concept for autonomous vehicles. Developed conceptual frameworks for multi-hop routing and implemented optimization algorithms for emergency route clearance

Key responsibilities:

- Used cooperative game theoretic techniques and unsupervised clustering algorithms for efficient routing for emergency vehicles and cooperative driving behavior
- Used intrinsic vehicular properties and dynamic network conditions to design routing algorithms via Shapley’s proportional allocation mechanisms, statistical inference techniques. Developed large scale simulations of realistic urban scenarios for validating routing algorithms
- Published and presented in reputed scientific conferences/workshops and utilized the concepts in classrooms

2010–2011 University of Bradford (Full Stack Web Developer)

Developed student coursework repository (SCORE) for interactive feedback management compliant with UK higher education standards.

Key responsibilities:

- Wrote academic reports and training material to be utilized at different schools for the use of the system
- Organized and delivered various training sessions for faculty and staff for the repository and database
- Published and presented in reputed scientific conferences/workshops and other departmental events

Corporate Experience

2011–2012 Metricell Ltd. UK (Software Engineer)

Developed a cross-platform mobile application for a private analytical company to pinpoint service area problems to drive necessary investment by mobile network providers.

Key responsibilities:

- Worked with a team of skilled software engineers to develop cross platform mobile application for network service and customer experience improvement
- Utilized advanced data structures and algorithms for real-time tracking and logging
- Developed design strategies and in-house UI's using advanced computer programming techniques. Used data encryption/decryption libraries for data security to develop and maintain multi-threaded application
- Wrote technical documentations which were advanced to publications in well reputed scientific conferences/workshops

Publications

Journals

- [1] **Bilal, M.**, Oh E., Liu, R., Breger, J., Medintz, I. & Cohen, Y, (2019). Bayesian Network Resource for Meta-Analysis: Cellular Toxicity of Quantum Dots. Small, 1900510. <https://doi.org/10.1002/sml.201900510>
Appeared as cover figure on the journal
- [2] W. Khan, K. Crockett, J. O'Shea, A. Hussain, & **B. Khan.** (2019). Intelligent Deception Detection Through Facial Micro-gestures (Under review). IEEE Transactions on Affective Computing

- [3] S. Kim, Y. Cohen, K.J. Moses, S. Sharma, **M. Bilal**, (2019). Polysulfone surface nano-structured with tethered polyacrylic acid. *Appl. Surf. Sci.*, 470, pp. 411-422
- [4] Soomin Kim; Kari Moses; Shivani Sharma; **Muhammad Bilal**, Yoram Cohen, (2019). Polysulfone Surface Nano- Structured with Tethered Polyacrylic Acid. *Data in Brief*, <https://doi.org/10.1016/j.dib.2019.103747>
- [5] **Bilal, M.**, Khan, W., Muggleton, J., Rustighi, E., Jenks, H., Pennock, S.R., Atkins, P.R., & Cohn, A. (2018). Inferring the most probable maps of buried underground utilities using Bayesian mapping model. (2018), vol. 150, pp. 52-66, <https://doi.org/10.1016/j.jappgeo.2018.01.006>
- [6] Yoram Cohen, **Muhammad Bilal**, & Haoyang Liu (2018). Comment on “Assessing the Risk of Engineered Nanomaterials in the Environment: Development and Application of the nanoFate Model”. *Environ. Sci. Technol.* DOI: [10.1021/acs.est.8b00486](https://doi.org/10.1021/acs.est.8b00486)
- [7] Romero-Franco, **M. Bilal**, Godwin, H.A., Cohen, Y. (2018). Assessment of information availability for environmental impact assessment of engineered nanomaterials. *J Nanopart Res*, <https://doi.org/10.1007/s11051-018-4402-4>
- [8] Kari J. Moses-Varin, **Muhammad Bilal**, Soomin Kim and Yoram Cohen. (2018). Tethered Hydrophilic Polymers Layers on a Polyamide Surface (2018) *Journal of Applied Polymer Science*, <https://doi.org/10.1002/app.46843>
- [9] **Bilal, M.**, Liu, H., Liu, R., & Cohen, Y. (2017). Bayesian Network as Support Tool for Rapid Query of the Environmental Multimedia Distribution of Nanomaterials. *Nanoscale*. doi: [10.1039/C6NR08583K](https://doi.org/10.1039/C6NR08583K)
- [10] E. Oh, R. Liu, A. Nel, K. Gemill, **M. Bilal**, Y. Cohen & I. Medintz, (2016) “Meta-analysis of cellular toxicity for cadmium-containing quantum dots”, **Nature Nanotechnology**, doi: [10.1038/nnano.2015.338](https://doi.org/10.1038/nnano.2015.338)
- [11] Romero, M., Godwin, H., **Bilal M.**, Cohen Y. (2017). Needs and Challenges for Assessing the Environmental Impacts of Engineered Nanomaterials (ENMs), *Beilstein J. Nanotechnol.* 8, 989–1014. DOI: [10.3762/bjnano.8.101](https://doi.org/10.3762/bjnano.8.101)
- [12] Thompson, J., Rahardianto, A., Kim, S., **Bilal M.**, Breckenridge, R., Cohen, Y. (2017) Real-time direct detection of silica scaling on RO membranes. *J of Membrane Science*, Vol 528, 15, Pp. 346-358. <https://doi.org/10.1016/j.memsci.2017.01.027>
- [13] Liu R, Rallo R, **Bilal M.**, Cohen, Y. (2015) Quantitative structure-activity relationships for cellular uptake of surface- modified nanoparticles, *Combinatorial Chemistry & High Throughput Screening*. 18(4): 365-375. DOI: [10.2174/1386207318666150306105525](https://doi.org/10.2174/1386207318666150306105525)
- [14] H. Liu, **M. Bilal**, A. Lazareva, A. Keller & Y. Cohen. (2015). Simulation tool for assessing the release and environmental distribution of nanomaterials. *Beilstein J. Nanotechnol.* 2015, 6, 938–951. doi:[10.3762/bjnano.6.97](https://doi.org/10.3762/bjnano.6.97)
- [15] **M. Bilal**, P.M.L. Chan, W. Khan. (2016). Cooperative Network for Emergency Communications: Fair Distribution of Reward among Players based on their Marginal Contribution. *JSAT*.
- [16] Khan, W., Darren, A., Kuru, K. & **M. Bilal**. (2018). The Flight Guardian: Au-

tonomous Flight Safety Improvement by Monitoring Aircraft Cockpit Instruments. J of Aerospace Inf. Systems. V. 15, No. 4, pp. 203- 214.

- [17] Wasiq Khan, Keeley Crockett, **M. Bilal**. (2018). Adaptive framing based similarity measurement between time warped speech signals using Kalman filter. ntl Journal of Speech Technology. Vol. 21. pp. 1- 12
- [18] W. Khan, P. Jiang, P. Chan, **M. Bilal**. (2014). A Creative Application of Wavelet Transform and Kalman Filter for Children Proof-reading and Continuous Speech Tracking in Online Stories and TV Programs, Inderscience publishers.

Working Papers

- [19] **Bilal, M.**, Kumar, K., Church, P., Liu R. & Cohen, Y, (2019). NanoDatabank: A Flexible Database Management System for Nanomaterials. (Ready for submission). Beilstein J. Nanotechnol.
- [20] **M. Bilal**. Osborne. O., Liu, R., Harper, S., & Cohen, Y. (2019 ready for submission). Assessment of embryonic zebrafish (EZ) toxicity of diverse nanomaterials based on meta-analysis. Nanotoxicology.

Conferences

- [1] W. Khan, A. Hussain, **B. Khan**, R. Nawaz & T. Bakar (2019). Novel Framework for Outdoor Mobility Assistance and Auditory Display for Visually Impaired People. 12th IEEE Intl. Conf. on Developments in e-Systems Engineering, Russia.
- [2] Liu, H. H. **Bilal, M.**, Lazareva, A., Keller, A., Cohen, Y., (2014). Regional multimedia distribution of nanomaterials and associated exposures: A software platform. 2014 IEEE International Conference on Bioinformatics and Biomedicine. 2014, 10. DOI: [10.1109/BIBM.2014.6999368](https://doi.org/10.1109/BIBM.2014.6999368)
- [3] **M. Bilal**, I. Awan, S. Mockford and A. e-Yar, (2012). A Unique Global Mobile Network Service Tracker and User Centric Data Analyser. 2012 Seventh International Conference on Broadband, Wireless Computing, Communication and Applications, Victoria, BC, pp. 534-539. doi: [10.1109/BWCCA.2012.94](https://doi.org/10.1109/BWCCA.2012.94)
- [4] **M. Bilal**, A. Yar, S. Mockford, W. Khan, & I. Awan, (2012). Tracesaver: A Tool for Network Service Improvement and Personalized Analysis of User Centric Statistics. 6th, Power control and optimization; Proceedings of the Sixth Global Conference on Power Control and Optimization; 2012; Las Vegas, NV. DOI: [10.1063/1.4768990](https://doi.org/10.1063/1.4768990)
- [5] **M. Bilal**, M. O. Hussain and P. M. L. Chan, (2012). A Reception Based Node Selection Protocol for Multi-hop Routing in Vehicular Ad-hoc Networks. 2012 IEEE 11th International Conference on Trust, Security and Privacy in Computing and Communications, Liverpool, pp. 1593-1600. doi: [10.1109/TrustCom.2012.52](https://doi.org/10.1109/TrustCom.2012.52)
- [6] **M. Bilal**, P.M.L. Chan, F.S. Meddings, A. Konstadopoulou. (2011). Learner Centered EAssessment with a Universal Marking Scheme. IEEE Int. Conf. Teaching & Learning. ICTL. Penang, Malaysia.

- [7] **M. Bilal**, P.M.L. Chan. (2011). Student Coursework Repository (SCORE): The hub for online assessment and learner support repository. Conf. Teaching & Learning. LTA. Bradford, United Kingdom.
- [8] **M. Bilal**, P.M.L. Chan, (2011). A Coalitional Incentive Scheme based on Game Theory for Multi-hop Routing in Vehicular Ad hoc Networks. IEEE 6th int. Conf. FCST 2011. Changsha, China. DOI: [10.1109/TrustCom.2011.227](https://doi.org/10.1109/TrustCom.2011.227)
- [9] **M. Bilal**, P. M. L. Chan and P. Pillai. (2010). A fastest multi-hop routing scheme for information dissemination in Vehicular Communication systems. SoftCOM 2010, 18th International Conference on Software, Telecommunications and Computer Networks, Split, Dubrovnik, 2010, pp. 35-41. [arXiv: 5623628](https://arxiv.org/abs/5623628)
- [10] **M. Bilal**, P. M. L. Chan and P. Pillai, (2010). Fastest-Vehicle Multi-hop Routing in Vehicular Ad hoc Networks. 2010 10th IEEE International Conference on Computer and Information Technology, Bradford, 2010, pp. 773-778. doi: [10.1109/CIT.2010.148](https://doi.org/10.1109/CIT.2010.148)
- [11] C. Evans and **M. Bilal**, (2007). Developing a WAP Application for Mobile Retail Customers. 2007 2nd International Conference on Pervasive Computing and Applications, Birmingham, 2007, pp. 328-332. doi: [10.1109/ICPCA.2007.4365463](https://doi.org/10.1109/ICPCA.2007.4365463)

Invited Talks and Presentations

- [1] **Bilal, M.** (2018). A Framework for the Assessment of Adequacy of Information for Environmental Impact Assessment of Engineered Nanomaterials, (Oral Presentation), AIChE, Pittsburgh, PA, Oct 28. 2018.
- [2] **Bilal, M.** (2018). NanoDatabank Training: Flexible Database Management System for Nanomaterials Research, CEIN Workshop on Data Management, Jan 12, 2018, University of California Santa Barbara, Santa Barbara.
- [3] **Bilal, M.** Liu, R. & Cohen Y. (2017). Association Rule Mining for Assessing the Relationships among Biological Responses of Embryonic Zebrafish, (Oral Presentation) AIChE, Annual Meeting, October 31, 2017, Minneapolis.
- [4] **Bilal, M.** & Cohen, Y. (2017). NanoDatabank: A Flexible Database Management System for Nanomaterial Research and Integration. Nano Working Group Webinar, NanoStandards, UCLA (Oral Presentation), June 1, 2017.
- [5] **Bilal, M.** (2017). Nanoinformatics platform for environmental impact assessment of engineered nanomaterials. American Chemical Society (ACS) National Meeting, (Oral Presentation), April 2-6, 2017, San Francisco.
- [6] **Bilal, M.** (2016). Meta-Analysis of Cellular Toxicity of Cadmium-Containing Quantum Dots Using Bayesian Networks. AIChE Annual Meeting, 11/14/2016, San Francisco.
- [7] Cohen, Y. & **Bilal, M.** (2016). et al. Environmental Decision Analysis for Nanomaterials. NSF Review, UC Center for Environmental Implications of Nanotechnology (UC CEIN). May 6, 2016.
- [8] **Bilal, M.** (2015). ToxNano: A Toolkit for Toxicity Data Analysis of Engineered Nanomaterials. Gordon Research Conference, (Oral Presentation), June 21-26, 2015,

West Dover, VT.

- [9] **Bilal, M.** (2015). Development of a Framework for Environmental Impact Assessment of Engineered Nanomaterials (ENMs). Gordon Research Conference, (Oral Presentation), June 21-26, 2015, West Dover, VT.
- [10] **Bilal, M.** (2015). Probabilistic Assessment of the Potential Environmental Impact of Engineered Nanomaterials. Nanoinformatics Workshop, (Oral Presentation), Jan 26-28, 2015, Arlington, VA.
- [11] **Bilal, M.** (2015). Nanoinfo.org: An integrated Nanoinformatics Web Portal., Nanoinformatics Workshop, (Oral Presentation), Jan. 28, 2015, Arlington, VA
- [12] **Bilal, M.** (2014). Probabilistic Nanoinformatics Modeling Platform for Assessing the Potential Environmental Impact of Engineered Nanomaterials. American Chemical Society, National Meeting, (Oral Presentation), August 11, 2014, San Francisco, CA
- [13] **Bilal, M.** (2014). Nanoinformatics platform for assessing the potential environmental distribution and exposure levels of engineered nanomaterials (ENMs). American Chemical Society Meeting, (Oral Presentation), Aug. 11, 2014, San Francisco, CA
- [14] **Bilal, M.** (2012). RA Reception Based Node Selection Protocol for Multi-hop Routing in Vehicular Ad-hoc Networks. Int. conf. IEEE IUCC, (Oral Presentation), Liverpool, UK, 25-27 June 2012.
- [15] **Bilal, M.** (2011). Learner Centered E-Assessment with a Universal Marking Scheme. IEEE Int. Conf. Teaching & Learning, (Oral Presentation). ICTL. Penang, Malaysia, Nov, 2011.
- [16] **Bilal, M.** (2010). A Fastest-Vehicle Multi-Hop Routing in Vehicular Ad hoc Networks. IEEE Conf. CIT – 2010, Bradford, UK (Oral Presentation).
- [17] **M. Bilal,** (2007). "Developing a WAP Application for Mobile Retail Customers," 2007 2nd International Conference on Pervasive Computing and Applications, Birmingham, 2007. (Oral presentation)

Technical Reports and Short Papers

- [1] **Haase, & Klaessig.** (2018). EU US Roadmap Nanoinformatics 2030. EU Nanosafety Cluster. <http://doi.org/10.5281/zenodo.1486012> Chapters 5,6 & 8
- [2] Cohen Y. & **Bilal, M.** et al. (2019). Environmental Decision Analysis for Nanomaterials. UC CEIN, Final Project Progress Report, April 22, 2019.
- [3] Cohen, Y., Godwin, H., **Bilal, M.** & Romero, M. F. (2018). Evaluating and Integrating the Body of Evidence for Environmental Decision Analysis of Engineered Nanomaterials (ENMs). Background Paper in University of California Los Angeles Workshop on Alternative Testing, Feb. 20 – 21, 2018.
- [4] Cohen Y. & **Bilal, M.** (2017). A nanoinformatics Platform for Environmental Impact Assessment of Manufactured Nanomaterials. Herman Skolnik Award Symposium.
- [5] **Bilal, M.** et al. (2018). An information assessment tool for nanomaterials (IANano) for assessment of the adequacy of the body of evidence for conducting environmental

impact assessment. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, Progress Report, 2018.

- [6] **Bilal, M.** et al. (2017). Online data exploration techniques for assessing the associations among biological responses for the development of nano-structure activity relationships. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, 2017.
- [7] **Bilal, M.** et al. (2017). Web-based data repository for Nanomaterial data and integration with environmental impact assessment tools. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, 2017.
- [8] **Bilal, M.** et al. (2016). Development of a CEIN framework for environmental impact assessment (EIA) of Engineered Nanomaterials. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, 2016.
- [9] **Bilal, M.** et al. (2016). A Bayesian Networks platform as a decisions support tool for exploration of toxicity geared at assessing causal relationships. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, Progress Report, 2016.
- [10] **Bilal, M.** et al. (2015). Environmental impact analysis for Nanomaterials. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, Progress Report, 2015.
- [11] **Bilal, M.** et al. (2015). Computational models of Nanomaterials Toxicity. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, Progress Report, 2015.
- [12] **Bilal, M.** et al. (2015). Multimedia Analysis of the Environmental Distribution of Nanomaterials. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, Progress Report, 2015.
- [13] **Bilal, M.** et al. (2014). QSARs of Nanomaterials Toxicity and Physicochemical Properties. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, Project Progress Report, 2014.

Synergistic Activities

- Reviewer, Nature Scientific Data. 2019
- Reviewer, Beilstein Journal of Nanotechnology. 2014 - Present
- Reviewer, ACS Nano. 2014 - Present
- Reviewer, Environmental Science and Technology. 2014 – Present
- Reviewer, Journal of Chemical Information. 2017 - Present
- Reviewer, Journal of Nanoparticle Research. 2017 - Present
- Reviewer, Nanotoxicology. 2014 - Present
- Reviewer, Nanoscale. 2016 – Present

- Reviewer, *Frontiers Pharmacology*. 2018 - Present
- Reviewer, *Natural Language Engineering*. 2018 - Present
- **Technical Session Chair Nanotechnology**: Advanced Materials: Issues in Nanoinformatics & Nanosafety Data, ACS Annual Meeting, 2017

Program Committee Member

- Annual IEEE International Conference on Advances in Computing and Communication Engineering (ICACCE-2018)
- The 2014 6th International Conference on Computational Intelligence in Security for Information Systems (CISIS-2014), Birmingham, UK
- 2013 Workshop: Informatics for Intelligent Context-Aware Enterprise Systems (ICAES)
- The 2012 Smart Internet of Things (IoT) Summit Conference, Manchester UK
- 6th Annual intl conf. Advanced Information Networking and Applications (AINA)
- Advances in Computing and Communications Engineering (ACCE)
- 2011 UK Performance Engineering Workshop (UKPEW) at University of Bradford
- 2010 7th International Conference on Computing and Information Technology (CIT)

Organizing Committee Member

- 2018 UC CEIN Alternative Testing Workshop. UCLA
- Organizer: 2012 Windows phone Camp by Microsoft. University of Bradford

Professional Societies and Scientific Groups

- EU US Roadmap Nanoinformatics 2030 (co-author)
- American Chemical Society, (ACS) (Member since 2014)
- American Institute of Chemical Engineers (Member since 2014)
- American Water Works Association (AWWA)
- Nano Working Group (Nano Standards) (Member since 2013)
- nanoHUB: Collaborator and Developer (Trainer of NanoDatabank since 2017)

Professional Training

- 2010 **Certificate** in Wireless Technologies for Healthcare University of Bradford, United Kingdom (International Workshop on Wireless Technologies)
- 2009 **Certificate** in Wireless Technologies in Sensor Networks University of Salzburg, Salzburg, Austria (SATNEx Summer School)
- 2008 **Certificate:** Game Theoretic Concepts in Wireless Sensor Networks University of Pisa, Italy (SATNEx Summer School)
- Online Courses:** A-Z Data Science, Computer Vision, Big Data Analytics, Deep Reinforcement Learning, Python Programming Bootcamp

Technical Skills

Programming

Proficiency in C++, Java, R, MATLAB, JavaScript, NodeJS, AngularJS (Web development: d3.js, PHP, Bootstrap), Intermediate skills: Python

Web Development

Visualization (d3.js), HTML, angularJS, Bootstrap

Machine Learning/Data mining

OpenCV computer vision models, real-time object detection and recognition, 3D modeling and geometric object detection. Extensive practical experience in deep neural networks, Bayesian Networks, self-organizing maps, hierarchical clustering, regression/classification, support vector machines, multidimensional scaling, decision trees (forests), and association rule mining.

Amazon Web Services

EC2, LightSail, S3, VPC, CloudFront, Route53, DNS

High performance computing/OS

Linux, Windows, Rocks cluster, Sun Grid Engine, Ganglia

RDMS & server development

MongoDB, MySQL, PostgreSQL, JDBC, Apache, DHCP

References

Available on request