



Princess Sumaya جامعة  
University الأميرة سميرة  
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King Hussein School كلية  
of Computing الملك الحسين  
Sciences لعلم الحوسبة

# KHSCS: Research Areas with samples

2023 - 2024



### ■ Time-Series Forecasting

- o Istaiteh, O., Owais, T., Al-Madi, N. and Abu-Soud, S., 2020, October. Machine learning approaches for covid-19 forecasting. In 2020 international conference on intelligent data science technologies and applications (IDSTA) (pp. 50-57). IEEE

### ■ Deep Learning & Data Mining

- o Ghnemat, R., Almodawar, A. and Al Saraireh, J., 2024. Scalable model for segmenting Cells' Nuclei using the U-NET architecture. Multimedia Tools and Applications, pp.1-24. ([Deep Learning](#))
- o ibat, D., Jamjoom, S., Al-Haija, Q.A. and Qusef, A., 2023. A systematic review: Detecting phishing websites using data mining models. Intelligent and Converged Networks, 4(4), pp.326-341. ([Data mining, phishing;](#))
- o Atiani, S., Elhilali, M., David, S.V., Fritz, J.B. and Shamma, S.A., 2009. Task difficulty and performance induce diverse adaptive patterns in gain and shape of primary auditory cortical receptive fields. Neuron, 61(3), pp.467-480

### ■ Statistics

- o Alshammari, M.S., Affify, A.A. and Abdelhay, O., 2019. Perception and convenience of caring for children with autism spectrum disorder among family medicine residents in Riyadh 2018. Journal of Family Medicine and Primary Care, 8(6), p.1902. ([Attitude, autism, autism spectrum disorder, autistic disorder, awareness, health knowledge, knowledge, perception, practice, residents](#))

### ■ Recommendation predictions

- o Fraihat, S., Abu Tahon, B., Alhijawi, B. and Awajan, A., 2023. Deep encoder–decoder-based shared learning for multi-criteria recommendation systems. Neural Computing and Applications, 35(34), pp.24347-24356. ([the shared learning technique, Recommendation predictions.](#))
- o Alhijawi, B., Fraihat, S. and Awajan, A., 2023. Adaptable inheritance-based prediction model for multi-criteria recommender system. Multimedia Tools and Applications, pp.1-22.

### ■ web knowledge, Semantic Web & Sentiment Analysis

- o Al-Smadi, M., Al-Ayyoub, M., Jararweh, Y. and Qawasmeh, O., 2019. Enhancing aspect-based sentiment analysis of Arabic hotels' reviews using morphological, syntactic and semantic features. Information Processing & Management, 56(2), pp.308-319. ([Semantic Evaluation, Artificial Intelligence, web knowledge, NLP](#) )
- o Diefenbach, D., Migliatti, P.H., Qawasmeh, O., Lully, V., Singh, K. and Maret, P., 2019, May. QAnswer: A Question Answering prototype bridging the gap between a considerable part of the LOD cloud and end-users. In The World Wide Web Conference (pp. 3507-3510). ([Question Answering, Semantic Web, Multilingual, Multi-Knowledge-Base](#))



### ■ IoT

- o Ibrahim, R.F., Abu Al-Haija, Q. and Ahmad, A., 2022. DDoS attack prevention for Internet of Thing devices using Ethereum blockchain technology. *Sensors*, 22(18), p.6806. ([blockchain](#); [Ethereum](#); [smart contract](#); [authorization](#); [DDoS attacks](#); [IoT](#))
- o Abushwereb, M., Alkasassbeh, M., Almseidin, M. and Mustafa, M., 2022. An accurate IoT intrusion detection framework using apache spark. arXiv preprint arXiv:2203.04347. ([Big data](#), [Internet of things \(IoT\)](#), [Apache spark](#), [Intrusion Detection System \(IDS\)](#))

### ■ Blockchain

- o Ibrahim, R.F., Abu Al-Haija, Q. and Ahmad, A., 2022. DDoS attack prevention for Internet of Thing devices using Ethereum blockchain technology. *Sensors*, 22(18), p.6806.
- o Ibrahim, R.F., Elian, A.M. and Ababneh, M., 2021, July. Illicit account detection in the ethereum blockchain using machine learning. In 2021 international conference on information technology (ICIT) (pp. 488-493). IEEE. [Ethereum](#), [Blockchain](#), [Fraud Detection](#), [machine learning](#), [Illicit account detection](#)

### ■ Wireless Sensor Networks (WSN)

- o Ahmad, A., Hababeh, M., Abu-Hantash, A., AbuHour, Y. and Musleh, H., 2020. Reduce Effect of Dependent Malicious Sensor Nodes in WSNs using Pairs Counting and Fake Packets. *INTERNATIONAL JOURNAL OF COMPUTERS COMMUNICATIONS & CONTROL*, 15(5). ([Wireless Sensor Networks \(WSN\)](#), [dependent malicious sensor nodes](#), [detection and prevention methods.](#))
- o Ahmad, A., Hababeh, M., Abu-Hantash, A., AbuHour, Y. and Musleh, H., 2020. Reduce Effect of Dependent Malicious Sensor Nodes in WSNs using Pairs Counting and Fake Packets. *INTERNATIONAL JOURNAL OF COMPUTERS COMMUNICATIONS & CONTROL*, 15(5).

### ■ Routing & Network traffic Analysis

- o Taleb, A.A., 2018. A comparative study of mobility models for wireless sensor networks. *J. Comput. Sci*, 14(10), pp.1279-1292. ([Wireless Sensor Networks \(WSNs\)](#), [Mobility Models](#), [Routing](#), [Mobile Sink](#))
- o Almomani, A., Alauthman, M., Alkasassbeh, M., Samara, G. and Liu, R.W., 2021, September. A Proposed Darknet Traffic Classification System Based on Max Voting Algorithms. In *International Conference on Cyber Security, Privacy and Networking* (pp. 349-355). Cham: Springer International Publishing. ([Network traffic Analysis](#))

### ■ Mobile ad-hoc network

- o Abdallah, A.E., Fayyumi, E., Abdallah, E.E., Qawasmeh, A. and Almalkawi, I., 2022. Spherical-based routing protocols for three-dimensional MANET. International Journal of Computing Science and Mathematics, 16(2), pp.125-135. (mobile ad-hoc network, )

### ■ Control and communication

- o Al-Mousa, A., Sababha, B.H., Al-Madi, N., Barghouthi, A. and Younis, R., 2019. UTSim: A framework and simulator for UAV air traffic integration, control, and communication. International Journal of Advanced Robotic Systems, 16(5), p.1729881419870937. ([Air traffic integration, control and communication, sense and avoid \(S&A\), UAV, simulation, Unity, unmanned aerial systems](#))

### ■ Resource allocation & statistical multiplexing

- o Chatterjee, S., Abdel-Rahman, M.J. and MacKenzie, A.B., 2021. On Optimal Orchestration of Virtualized Cellular Networks With Statistical Multiplexing. IEEE Transactions on Wireless Communications, 21(1), pp.310-325.
- o Abdel-Rahman, M.J., AlWaqfi, A.M., Atoum, J.K., Yaseen, M.A. and MacKenzie, A.B., 2023. A Novel Multi-Objective Sequential Resource Allocation Optimization for UAV-Assisted VLC. IEEE Transactions on Vehicular Technology.

### ■ UAVs & VLC

- o Al-Mousa, A., Sababha, B.H., Al-Madi, N., Barghouthi, A. and Younis, R., 2019. UTSim: A framework and simulator for UAV air traffic integration, control, and communication. International Journal of Advanced Robotic Systems, 16(5), p.1729881419870937. ([Air traffic integration, control and communication, sense and avoid \(S&A\), UAV, simulation, Unity, unmanned aerial systems](#))

### ■ Software-Defined Networking

- o Alhijawi, B., Almajali, S., Elgala, H., Salameh, H.B. and Ayyash, M., 2022. A survey on DoS/DDoS mitigation techniques in SDNs: Classification, comparison, solutions, testing tools and datasets. Computers and Electrical Engineering, 99, p.107706. ([Software-Defined Networking, Denial of Service \(DoS\) attack.](#))

### ■ Cloud computing & edge computing

- o Hamdan, S., Ayyash, M. and Almajali, S., 2020. Edge-computing architectures for internet of things applications: A survey. Sensors, 20(22), p.6441.



### ■ Intrusion, Anomaly & fake news Detection

- o Qalaja, E.K., Al-Haija, Q.A., Tareef, A. and Al-Nabhan, M.M., 2022. Inclusive study of fake news detection for COVID-19 with new dataset using supervised learning algorithms. *International Journal of Advanced Computer Science and Applications*, 13(8).

### ■ Password Security

- o Alkurdi, Y., Al Fayoumi, M., Al-badarneh, A. and Al-Haija, Q.A., 2023, August. Enhancing Password Security via Supervised Learning. In *2023 International Conference on Information Technology (ICIT)* (pp. 256-259). IEEE

### ■ Cyber-Phishing & Phishing Detection

- o Almseidin, M., Alkasassbeh, M., Alzubi, M. and Al-Sawwa, J., 2022. Cyber-Phishing Website Detection Using Fuzzy Rule Interpolation. *Cryptography*, 6(2), p.24
- o Abutaha, M., Ababneh, M., Mahmoud, K. and Baddar, S.A.H., 2021, May. URL phishing detection using machine learning techniques based on URLs lexical analysis. In *2021 12th International Conference on Information and Communication Systems (ICICS)* (pp. 147-152). IEEE.

### ■ Security and privacy & Mobile platform security

- o Saif, A., Al-Kilani, H., Qasaimeh, M. and Al-Refai, A., 2021, April. Analysis of Android applications permissions. In *International Conference on Data Science, E-learning and Information Systems 2021* (pp. 243-249). [Security and privacy](#) » [Systems security](#); [Operating systems security](#); [Mobile platform security](#)

### ■ Open Wi-Fi networks Security

- o Karaymeh, A., Ababneh, M., Qasaimeh, M. and Al-Fayoumi, M., 2019, October. Enhancing data protection provided by VPN connections over open WiFi networks. In *2019 2nd International Conference on new Trends in Computing Sciences (ICTCS)* (pp. 1-6). IEEE.

### ■ Cyber laws

- o Al-Enizi, Z.K. and Naser, M., 2022. The Law Applicable to P2P Networks on National and International Bases for Violating Intellectual Property Rights. *International Journal of Cyber Warfare and Terrorism (IJCWT)*, 12(1), pp.1-10. [cyber laws](#), [Copyright Law](#), [Information Technology](#), [Intellectual Property Rights Infringement](#), [Peer-to-Peer Networks](#)













## Database

- AlOmari, H., Alkhateeb, A. and Hammo, B., 2023. Multi-Omics Databases. Machine Learning Methods for Multi-Omics Data Integration, pp.151-166. ([Multi-Omics Databases](#))
- Abuqaddom, I. and Hammo, B., 2017, December. A survey of data replication techniques for MANET databases. In 2017 2nd International Conference on the Applications of Information Technology in Developing Renewable Energy Processes & Systems (IT-DREPS) (pp. 1-6). IEEE. ([MANET databases](#))
- Al-Sakran, A., Qattous, H. and Hijjawi, M., 2018, July. A proposed performance evaluation of NoSQL databases in the field of IoT. In 2018 8th International conference on computer science and information technology (CSIT) (pp. 32-37). IEEE. [NoSQL](#); [MongoDB](#); [Big Data](#); [Chord protocol](#); [RDBMS](#); [BASE](#).
- Al-Saraireh, J., 2019. A novel approach for query over encrypted data in database. International Journal of Information and Computer Security, 11(6), pp.621-636. ([SQL](#); [hash value](#); [secure data](#); [database](#); [security](#); [encryption](#).)



## Computing Education

- Prather, J., Denny, P., Leinonen, J., Becker, B.A., Albluwi, I., Craig, M., Keuning, H., Kiesler, N., Kohn, T., Luxton-Reilly, A. and MacNeil, S., 2023. The robots are here: Navigating the generative ai revolution in computing education. In Proceedings of the 2023 Working Group Reports on Innovation and Technology in Computer Science Education (pp. 108-159).
- Prather, J., Denny, P., Leinonen, J., Becker, B.A., Albluwi, I., Caspersen, M.E., Craig, M., Keuning, H., Kiesler, N., Kohn, T. and Luxton-Reilly, A., 2023, June. Transformed by transformers: Navigating the ai coding revolution for computing education: An iticse working group conducted by humans. In Proceedings of the 2023 Conference on Innovation and Technology in Computer Science Education V. 2 (pp. 561-562). [Social and professional topics » Computing education](#); [Computing methodologies » Artificial intelligence](#).

