# Rajesh Kumar

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| **Website** | http://faculty.uestc.edu.cn/KUMARRAJESH/ |
| **Phone No:** | +86-13699029542 |
| **Email:** | rajakumarlohano@gmail.com |
| **Date of Birth:** | 10. Feb.1991 |
| **Nationality:** | Pakistan |
| **Gender:** | Male |
| **Passport #:** | CB422855 |
| **Marital Status:** | Single |
| **WeChat #:** | raja21066 |
| **Google Scholar:** | Click Here |

## PROFESSIONAL PROFILE

Dr. Rajesh Kumar is an outstanding graduate of the University of Electronic Science and Technology of China. He won the academic performance award and outstanding graduate student at the University of Electronic Science and Technology of China from 2016 to 2019. He worked on two national projects with prof Xiaosong Zhang during 2017-2019 (including the 2019 National Natural Science Foundation Fund "Research on Intelligent Identification Method of IoT Malware Based on Android"). Additionally, he won the project "Blockchain Based Secure Data Sharing" from the University of Electronic Science and Technology Talent Special Fund in 2019. He has published more than 40 International Journal and Conference papers in the field of Deep Learning, Machine Learning, and Information Security. He has received government and university level projects in 2019 and 2020.

## RESEARCH INTERESTS

• Network Security • Deep Learning • Machine Learning • Computer Vision • Blockchain technology

## EDUCATION

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|---|---|
| UNIVERSITY OF ELECTRONICS SCIENCE AND TECHNOLOGY OF CHINA<br>**PHD (Computer Science)** | **2016-2019** |
| UNIVERSITY OF SINDH, JAMSHORO<br>**MS (Computer Science)** | **2014-2016** |
| UNIVERSITY OF SINDH, JAMSHORO<br>**BS (Computer Science)** | **2010-2013** |

## EMPLOYMENT

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| YANGZI DELTA RIVER RESEACH INSTITUTE OF HUZHOU, UNIVERSITY OF ELECTRONICS SCIENCE AND TECHNOLOGY OF CHINA<br>**Associate Professor** | **July 2021- Current** |
| UNIVERSITY OF ELECTRONICS SCIENCE AND TECHNOLOGY OF CHINA<br>Advisor: Dr. Wang Wenyong<br>**Postdoctoral Fellow** | **June 2019- June 2021** |

SOFTWARE AND WEB APPLICATION DEVELOPER
UNIVERSITY OF SINDH, Jamshoro,                                        **2014-2015**
Pakistan (**Internship**)

# 🧪 Teaching Experience

### Associate Professor Huzhou UESTC (2021 to Current):

- ✓ Teaching various subjects to students with lectures, tutorials, labs and coursework.
- ✓ Supervise Master Students.
- ✓ Teach Java, Database, Data structure, C++, Deep Learning, Research Methodology, and Blockchain.
- ✓ Undertake research activities and make significant contributions to the field of Computer Vison Projects.

### Private Center AIMS IT Pakistan (2014-2016):

- ✓ Teach Java Programing Language.
- ✓ Teach PhP Web Programing.
- ✓ Teach Android Language.
- ✓ Teach Database and Data Structure.

# 🧪 Dataset Creation Experience

- ✓ Create new dataset for the Grass Cutting Robot.
- ✓ Combine 6 opensource dataset and generate new dataset for Auto driving Ship Navigation.
- ✓ Build a dataset for Natural Language Processing (Sindhi named entity recognition).
- ✓ Collect Dataset form 8 Hospital of COVID-19 lung detection.

# ≔ LIST OF PATENTS

| S# | Tittle | Author Order | Patent Number | Date | Country |
|----|--------|--------------|---------------|------|---------|
| 1 | Context-enhanced dirichlet model for online clustering in short text streams | 1 | 202211504585.1 | 20-11-2022 | China |
| 2 | RFID tag design with platform tolerant features using multi-resonant surfaces | 1 | 202211388226.4 | 15-10-2022 | China |
| 3 | A method for ranking the importance of high-order structures in high-order networks | 2 | 2022114545198 | 21-11-2022 | China |
| 4 | A deep learning framework for addressee detection using audio and facial inputs | 9 | 202211019716.7 | 01-11-2022 | China |

# ≔ LIST OF SCI JOURNALS

| S# | Tittle | Author Order | Journal Name | Date | Cited | Link |
|----|--------|--------------|--------------|------|-------|------|
| 1 | Blockchain and homomorphic encryption based privacy-preserving model aggregation for medical images | 1 | Computerized Medical Imaging and Graphics | 20-10-2022 | 6 | Open |

| 2 | Blockchain-federated-learning and deep learning models for covid-19 detection using ct imaging. | 1 | IEEE Sensors Journal | 15-07-2021 | 175 | Open |
|---|---|---|---|---|---|---|
| 3 | An integration of blockchain and ai for secure data sharing and detection of CT images for the hospitals | 1 | Computerized Medical Imaging and Graphics | 01-01-2021 | 61 | Open |
| 4 | An online semantic-enhanced graphical model for evolving short text stream clustering | 4 | IEEE Transactions on Cybernetics | 30-09-2021 | 1 | Open |
| 5 | Secure large-scale E-voting system based on blockchain contract using a hybrid consensus model combined with sharding | 2 | ETRI Journal | 01-04-2021 | 33 | Open |
| 6 | Research on data mining of permission-induced risk for android iot devices. | 1 | Applied Sciences-Basel | 02-01-2019 | 29 | Open |
| 7 | A multimodal malware detection technique for android iot devices using various features | 1 | IEEE Access | 23-05-2019 | 84 | Open |
| 8 | An efficient and provably secure ecc-based conditional privacy-preserving authentication for vehicle-to-vehicle communication in vanets | 4 | IEEE Transactions on Vehicular Technology | 13-01-2021 | 29 | Open |
| 9 | A federated learning approach for privacy protection in context-aware recommender systems | 2 | Computer Journal (Oxford Press) | 30-04-2021 | 13 | Open |
| 10 | Making assembly line in supply chain robust and secure using UHF RFID | 2 | Scientific Reports | 10-09-2021 | 10 | Open |
| 11 | Visual features with spatio-temporal-based fusion model for cross-dataset vehicle re-identification | 5 | Applied Sciences-Basel | 01-08-2020 | 9 | Open |
| 12 | Adaptive wavelet based MRI brain image de-noising | 3 | Frontiers in Neuroscience | 22-08-2020 | 22 | Open |
| 13 | Efficient hybrid clustering scheme for data delivery using internet of things enabled vehicular ad hoc networks in smart city traffic congestion. | 6 | Journal of Internet Technology | 01-12-2020 | 9 | Open |
| 14 | Efficient and deep vehicle re-identification using multi-level feature extraction | 6 | Applied Sciences-Basel | 27-03-2019 | 19 | Open |
| 15 | An adaptive multi-layer botnet detection technique using machine learning classifiers | 3 | Applied Sciences-Basel | 11-06-2019 | 101 | Open |
| 16 | Context-aware bidirectional neural model for sindhi named entity recognition | 4 | Applied Sciences-Basel | 28-09-2021 | - | Open |
| 17 | Trends in vehicle re-identification past, present, and future: a comprehensive review | 5 | Mathematics | 27-11-2021 | 16 | Open |
| 18 | Multi scale and direction target detecting in remote sensing images via modified YOLO-v4 | 3 | IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing | 01-06-2022 | 9 | Open |
| 19 | Robust mobile robot navigation in cluttered environments based on hybrid adaptive neuro-fuzzy inference and sensor fusion | 6 | Journal of King Saud University - Computer and Information Sciences | 03-09-2022 | - | Open |
| 20 | MCNN: a multi-level CNN model for the classification of brain tumors in IoT-healthcare system | 3 | Journal of Ambient Intelligence and Humanized Computing | 30-07-2022 | - | Open |
| 21 | Probabilistic approach to covid-19 data analysis and forecasting future outbreaks | 4 | Diagnostics | 12-10-2022 | - | Open |

| | Using a Multi-Layer Perceptron Neural Network | | | | | |
|---|---|---|---|---|---|---|
| 22 | Facial and audio features in mixed human-human and human-robot settings | 10 | IEEE Systems Man and Cybernetics Magazine | 12-01-2022 | - | Open |

# ≣ LIST OF BOOK CHAPTERS

| S# | Tittle | Author Order | Book Name | Link |
|---|---|---|---|---|
| 1 | A survey of intelligent techniques for android malware detection | 1 | Malware Analysis Using Artificial Intelligence and Deep Learning (Spinger) | Open |

# ≣ LIST OF EI JOURNALS

| S# | Tittle | Author Order | Journal Name | Date | Cited | Link |
|---|---|---|---|---|---|---|
| 1 | Simple and efficient computational intelligence strategies for effective collaborative decisions | 2 | Future Internet | 21-01-2019 | - | Open |
| 2 | Analysis of resnet and googlenet models for malware detection | 3 | Journal of Computer Virology and Hacking Techniques | 28-09-2018 | 130 | Open |
| 3 | Optimizing a deep learning model in order to have a robust neural network topology | 2 | International Journal of Modeling and Optimization | 1-06-2018 | 1 | Open |
| 4 | Modelling choice selection system of a public sector general university in pakistan | 1 | Sindh University Research Journal-SURJ (2016) | 1-08-2016 | 1 | Open |

# ≣ LIST OF CONFERENCES

| S# | Tittle | Author Order | Journal Name | Date | Cited | Link |
|---|---|---|---|---|---|---|
| 1 | A survey of blockchain based on e-voting systems | 2 | Proceedings of the 2019 2nd International Conference on Blockchain Technology and Applications | 09-12-2019 | 27 | Open |
| 2 | Malicious code detection based on image processing using deep learning | 1 | International Conference on Computing and Artificial Intelligence (ICCAI 2018)" | 12-03-2018 | 49 | Open |
| 3 | Effective and explainable detection of android malware based on machine learning algorithms | 1 | International Conference on Computing and Artificial Intelligence (ICCAI 2018) | 12-03-2018 | 22 | Open |
| 4 | Malicious URL detection using multi-layer filtering model | 1 | The 14th International Computer Conference on Wavelet Active Media Technology and Information Processing (2017) | 12-02-2018 | 19 | Open |
| 5 | Evaluating the performance of deep neural networks for health decision making | 3 | 8th International Congress of Information and Communication Technology (ICICT-2018) | 27-01-2018 | 10 | Open |

| 6 | Probabilistic time context framework for big data collaborative recommendation | 4 | | International Conference on Computing and Artificial Intelligence (ICCAI 2018) | 12-03-2018 | 2 | Open |
|---|---|---|---|---|---|---|---|
| 7 | Evaluating the performance of resnet model based on image recognition | 3 | | International Conference on Computing and Artificial Intelligence (ICCAI 2018) | 12-03-2018 | 51 | Open |
| 8 | Analysis of resnet model for malicious code detection | 3 | | The 14th International Computer Conference on Wavelet Active Media Technology and Information Processing (2017) | 02-07-2017 | 4 | Open |
| 9 | Internet of things—smart traffic management system for smart cities using big data analytics | 3 | | The 14th International Computer Conference on Wavelet Active Media Technology and Information Processing (2017) | 02-07-2017 | 59 | Open |
| 10 | A hybrid technique to detect botnets, based on p2p traffic similarity | 2 | | 2019 Cybersecurity and Cyberforensics Conference (CCC) | 07-05-2019 | 23 | Open |
| 11 | An improved convolutional neural network model for intrusion detection in networks | 4 | | 2019 Cybersecurity and Cyberforensics Conference (CCC) | 07-05-2019 | 63 | Open |
| 12 | Elimination of irrelevant features and heart disease recognition by employing machine learning algorithms using clinical data | 5 | | The 17th International Computer Conference on Wavelet Active Media Technology and Information Processing (2020) | 18-12-2020 | - | Open |
| 13 | H3DNN: 3d deep learning based detection of covid-19 virus using lungs computed tomography | 3 | | The 17th International Computer Conference on Wavelet Active Media Technology and Information Processing (2020) | 18-12-2020 | 22 | Open |
| 14 | A Non-Parametric Multi-Lingual Clustering Model for Temporal Short Text | 2 | | The 17th International Computer Conference on Wavelet Active Media Technology and Information Processing (2020) | 18-12-2020 | 2 | Open |
| 15 | Neural Joint Model for Part-of-Speech Tagging and Entity Extraction | 2 | | 13th International Conference on Machine Learning and Computing (2021) | 26-02-2021 | - | Open |
| 16 | Blockchain Based Monitoring on Trustless Supply Chain Processes | 3 | | 6th International Conference on Cloud Computing and Big Data Analytics (2021) | 24-04-2021 | - | Open |
| 17 | Analyzing and battling the emerging variants of covid-19 using artificial neural network and blockchain | 6 | | The 18th International Computer Conference on Wavelet Active Media Technology and Information Processing (2021) | 10-12-2021 | | Open |

# PROJECTS

| S# | Project Name | Date | Project Number | Project Source |
|---|---|---|---|---|
| 1 | Research on Blockchain Sharding Consensus ( 区块链分片共识研究) | 2019/07 2021/07 | Y030190236010 16201 | China Postdoctoral Science Foundation |
| 2 | AI pattern recognition and COVID-19 blockchain security data sharing | 2020/07 2021/07 | Y125190285540 16524 | University of Electronic Science and Technology of China |
| 3 | Research on Airline Passenger Luggage Tracing Technology Based on Electronic Tag 我们 自然科学基金项目：基于电子标签的 航空旅客行李全程跟踪技术研究 | 2021/01 2024/12 | U2033212 | National Natural Science Foundation of China |

| 4 | Research on Intelligent Identification Method of IoT Malware Based on Android 基于 Android 的 IoT 恶意软件智能识别方法研究 | 2017/01 2019/07 | 61572115 | National Natural Science Foundation of China |
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# 🧪 SKILLS

**Leadership & Management Skills:**

- ✓ Supervision of a Master's student for design projects for National Science Foundation of China.
- ✓ Led a team of data sharing security towards the Kaggle competition
- ✓ Organized weekly training with team-based challenges.
- ✓ Presented challenge solutions.

**Programming Language Skills:** • JAVA • C/C++, • Python, • Android • DotNet • PHP

**Database Design Skills:** Databases and Database Management of Enterprise Organization University of Sindh.

**Computer Skills:** Microsoft Office, Visual Studio, MYSQL, Adobe Photoshop

**Advising and collaboration of Master's students:**

- ✓ Binary Analysis Tool For Identification Variable Types In Binary Programs.
- ✓ Detecting Privacy Leaks Through Existing Android Frameworks.

# 🎓 CERTIFICATES

| University of Electronic Science & Technology of China **Best Performance Award , China** | **2018** |
| --- | --- |
| Aims Academy, Pakistan **Microsoft Office** | **April 2011 to Aug 2011** |
| University of Sindh, Pakistan **Web Developer** | **1 year** |
| NETLYNIC I.T ACADEMY, Pakistan **Java, Android, Developer** | **Jan 2011 to JAN 2013** |

# 📋 Real Time Project Development

**Python Development:**

- ✓ Blockchain based federated learning model for secure data sharing (Code).
- ✓ Federated learning for medical images (Code).
- ✓ Design a federated learning model for secure data sharing (Code).
- ✓ Android malware detection (Code).
- ✓ Cancer detection  (Code).

**Web Development:**

- ✓ University of Sindh examination results.(Code) (http://exam.usindh.edu.pk/).
- ✓ University of Sindh admission results. (Code) (http://admission.usindh.edu.pk/).

- ✓ Book board website (http://www.stbb.edu.pk).
- ✓ Time table management system ( http://timetable.usindh.edu.pk).
- ✓ School management system.

## Android Development:

- ✓ SMS and call tracking system ([Code](#)).
- ✓ Online banking system ([Code](#)).
- ✓ Result information system using sms technology.
- ✓ Excel sms sender (Bulk SMS Sender).
- ✓ Puzzle game ([Code](#)).
- ✓ Annoying alarm system.
- ✓ Event notification system University of Sindh.
- ✓ Fees Payment System.

## Java Development

- ✓ RFID based attendance management system.
- ✓ School management system ([Code](#)) (The Guardian School Hyderabad) .
- ✓ Laboratory management system ([Code](#))(Advance Lab Hyderabad) .

## .Net Development

- ✓ Hospital management system.
- ✓ Shop management system.

## Arduino Development

- ✓ Factory control using ethernet (Internet Technology).

**Note: All projects source code available this link:**  https://github.com/raja21068/

# PROFESSIONAL ACTIVITIES

## Journal External Reviewer:

- ✓ IEEE Transactions on Information Forensics and Security.
- ✓ IEEE Internet of Things.
- ✓ Elsevier Computers & Security.
- ✓ IEEE ACCESS.

## Conference External Reviewer:

- ✓ The 14th International Computer Conference on Wavelet Active Media Technology and Information Processing.
- ✓ The 15th International Computer Conference on Wavelet Active Media Technology and Information Processing.
- ✓ 2st Workshop on Cloud Security and Privacy.

# TALKS

- ✓ **Key Note Speaker**: Challenges and Implications of blockchain with federated learning, "in Gundong 2019".
- ✓ **Presenter:** Malicious Code Detection: Image Processing Using Deep Learning: International Conference on Computing and Artificial Intelligence (ICAAI), Chengdu, China, March 2018.

- ✓ **Presenter:** Artificial Intelligence challenges and implantation to the current trends, AI Seminar in UESTC, 2019.
- ✓ **Presenter:** Latex and other research tools:  Invited talk at Sichuan University.

# PERSONAL INFORMATION

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| **Languages** | Chinese, English, Sindhi & Urdu. |
| **Hobbies** | Watching Movies, Badminton, Table Tennis, Swimming, Books Reading & Jogging. |