Saeed **Iqbal**

DEEP LEARNING SCIENTIST

1 - Khayaban-e-Jinnah, Johar Town, Lahore

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"Make the change that you want to see in the world."

Research Interest

MY RESEARCH FOCUSES ON MACHINE LEARNING, DEEP LEARNING, COMPUTER VISION, BIG DATA INFORMATICS:
- My research interests lie primarily in working with deep learning methodologies for integrating and analyzing large collections of multi-modal medical images and object detection/tracking. I began my research career back in 2009 in security on the smartphone platforms, specifically Android and was working on usage control and attestation of this immensely popular smartphone software stack. During graduation, I have completed and delivered some machine learning based applications. After that my interests are developing towards machine learning and deep learning models to aid medical image analysis for tumor detection. I have a vast experience working with radiology images and the deep learning techniques, I have hands-on experience include regression, classification, feature extraction and reinforcement learning, convolutional neural networks (CNN), Fully connected neural networks (FCNN), Recurrent neural networks (RNN), time-series analysis, supervised and unsupervised learning etc. My PhD research also lies in medical imaging analysis using deep learning techniques and I am planning to continue my post-doc research in the same area.

Education

University of Central Punjab, *Pakistan*

PhD IN COMPUTER SCIENCE – IN PROGRESS *2016 –*
- **Thesis Topic:** Adaptive Self-learning Segmentation Systems using Hybrid-Dense Convolutional Neural Network
- **Advisor :** Dr. Adnan N. Qureshi
- **Thesis Status:** Ph.D Thesis Submitted.

FAST-NUCES(National University of Computer & Emerging Science) *Pakistan*

MS IN COMPUTER SCIENCE *Sep. 2011 - Dec. 2012*
- Batch Topper
- **Thesis Topic:** Extending Java Pathfinder (JPF) with Property Classes for Verification of Android Permission Extension Framework
- **Advisor :** Shakir Ullah Shah
- **Co-advisor :** Mohammad Nauman

PUCIT(Punjab University College of Information Technology) *Lahore, Pakistan*

B.S. IN INFORMATION TECHNOLOGY *Sep. 2003 - Sep. 2007*
- Specialization (Software Engineering)
- Minor in Computer and Information Systems (programming and algorithms)

Publications

- **Saeed Iqbal** and Adnan N Qureshi and Mukti Akter. "Using Local Binary Patterns and Convolutional Neural Networks for Melanoma Detection" *Springer, Intellisys Conference 2019, 5-6 September 2019 – London, United Kingdom*
- **Saeed Iqbal** and Adnan N Qureshi and Mukti Akter. "Using Local Binary Patterns and Convolutional Neural Networks for Melanoma Detection"*Proceedings of SAI Intelligent Systems Conference IntelliSys 2019: Intelligent Systems and Applications pp. 782–789*
- **Saeed Iqbal** and Adnan N Qureshi and Awais M Lodhi. "Content Based Video retrieval using Convolutional Neural Network"*Proceedings of SAI Intelligent Systems Conference IntelliSys 2018: Intelligent Systems and Applications pp. 170–186*
- **Saeed Iqbal** and Adnan N Qureshi and Awais M Lodhi. "Content Based Video retrieval using Convolutional Neural Network"*IEEE, Intellisys Conference 2018, 6-7 September 2018 – London, United Kingdom*
- **Iqbal, Saeed**, and Muhammad Shaheen. "A machine learning based method for optimal journal classification." *In Internet Technology and Secured Transactions (ICITST), 2013 8th International Conference for, pp. 259-264. IEEE, 2013.*
- Shaheen, Muhammad, and **Saeed Iqbal**. "Labeled clustering a unique method to label unsupervised classes." *In Information Science and Technology (ICIST), 2013 International Conference on, pp. 210-214. IEEE, 2013.*
- **Iqbal, Saeed**, Shakir Ullah Shah, Mohammad Nauman, and Muhammad Amin. "Extending Java Pathfinder (JPF) with property classes for verification of Android permission extension framework." *In System Engineering and Technology (ICSET), 2013 IEEE 3rd International Conference on, pp. 15-20. IEEE, 2013.*
- **Iqbal, Saeed** Imran Arshad Choudhry and Kamran Shabbir "Verification of Android Permission Extension Framework using SPF and JPF" *The International Journal of Computer Science and Information Security (IJCSIS) – 2016*

Research Projects

2019 – **My Antenatal Monitoring Assistant (MAMA),** Maternal and fetal health care is a challenge faced globally in developed as well as developing countries. Complications occurring during pregnancy can result in the death of mother as well as the infant. The significant reasons associated with such adverse outcomes are lifestyle of the mother as well as limited knowledge regarding pregnancies.

2017-2019	**Skin Cancer Detector**, Developing a software which can detects skin cancer from images using computer vision without the painful and time consuming process of laboratories and reduce the cost of laboratories test.	*sponsored by FIT, UCP*
2018	**Capturing Human Action for Smart Vehicles**, Develping a system that will alert the driver on such scenarios by tracking eye movements, head movements and gesture within specific time frames.	*sponsored by FIT, UCP*
2017-19	**Human Action Recognition System**, Optimized detection/tracking system using Deep Learning with a commodity hardware (PTZ cameras) in real time environment	*sponsored by FIT, UCP*
2019	**Breast Cancer Detection**, Working on R&D of breast cancer to recognize cancer from images using computer vision and deep learning model with the help of PyTorch (fb.com) and Tensor flow (google.com)	*sponsored by FIT, UCP*
2017	**CMS for Graduate Student**, Developing a web based software to store/managed Graduate Data according to NCEAC and HEC requirements.	*sponsored by FIT, UCP*

Submitted Publications

- **Saeed Iqbal** and Adnan N Qureshi and Nata Selitskaya. "A hybrid approach using CNN and Local Binary Patterns for diagnosis and classification of images of Melanoma cases" *TURKISH JOURNAL OF ELECTRICAL ENGINEERING & COMPUTER SCIENCES by the Scientific and Technological Research Council of Turkey (TÜBİTAK) – ISSN: 1300-0632* , **Submitted – Under Review.**
- **Saeed Iqbal** and Imran Arshad. "Intelligent Buffer Management Policy in Post Disaster Network Using DTN "*5th IEEE International Conference on Computer and Communications (ICCC) Chengdu, China*, **Submitted – Accepted.**
- Shaheen, Muhammad and **Iqbal, Saeed**. "Mining Quality Indicators to Rank Journals"*Journal of **IEEE Consumer Electronics Magazine**, Production and Hosting by **IEEE***, **Accepted**
- Shaheen, Muhammad and **Iqbal, Saeed**. "Effective Journal ranking framework for consumers"*Journal of **IEEE Consumer Electronics Magazine**, Production and Hosting by **IEEE***, **Accepted**
- Shaheen, Muhammad and **Iqbal, Saeed**. "Classification of International Science Journals." *Journal of **Knowledge-based systems**, Production and Hosting by **Elsevier***, **Submitted – Under Review.**
- **Iqbal, Saeed**. "Data Management in Cloud Computing Using RBAC" ***Journal of Zhejiang University Science C (Computers & Electronics)**, Production and Hosting by **Springer***, **Submitted – Under Review.**

Software Skills

Machine Learning (Text/Images) and Computer Vision Software/APIs:
- Expert Level : Tensor flow, PyTorch, Keras
- Open CV
- Intermediate Level : Tika, Jackrabbit, Nutch (Lucene, Solr)

Computer Programming
- Expert Level: Java, Python, C, C++, JavaScript, HTML, AJAX, PHP, SQL, MySQL, Web Services, CSS, XML (DTD, Schema, DOM). and others
Version Control and Software Configuration Management:
- DVCS (Mercurial/MQ, Git/StGit), VCS (RCS, CVS, SVN, SCCS), and others
Software Verification:
- Expert Level: Java Pathfinder (JPF), Simple PRomela Interpreter (SPIN), NuSMV.
Cloud Computing Technologies:
- Hadoop/Mapreduce (HBase, NoSQL (MongoDB, Cassandra), Mahout (Parallel Clustering/Classification Techniques)
Information/Internet Technology:
- Networking (UDP, TCP, ARP, DNS, Dynamic routing), Services (Apache, SQL, MediaWiki, POP, IMAP, SMTP, application-specific daemon design).
Desktop Editing and Productivity Software:
- Vim, Eclipse
- Expert Level: TEX (LaTeX, BiBTeX, PSTricks)
- Expert Level: Microsoft Office, OpenOffice.org, LibreOffice, Google Docs.

Experience

University of Central Punjab *Lahore, Pakistan*
Assistant Professor & Researcher *Jul. 2013 - Current*
- Taught following Computer Science courses:
    - **Programming for BigData** (3 CHrs) **(SPRING 2020, FALL 2019)**
    - **Introduction to Computing** (4 CHrs)– **(FALL, 2019 Spring 2014, Summer 2014,Fall 2014-15, Spring 2015)**
    - **Web Information Retrieval** (3 CHrs) **(FALL 2018, Summer 2018-2017)**
    - **Web Application Development** (3 CHrs) – **FALL 2018, Summer 2017, Spring 2017, Fall 2016, Fall 2015**
    - **Introduction to DBMS** (4 CHrs) - (**Spring 2019, 2018 & 2016, Summer 2016, Fall 2015, Summer 2013**)
    - **Operating Systems** (4 CHrs) – (**FALL 2013-14, Spring 2013**)
    - **Programming Fundamentals** (4 CHrs) – (**FALL 2013-14**)
- Researched means of retrieving a corresponding data based on contents using meta data similarity algorithm.

HPS College (Govt), Hangu
Lecturer

Pakistan
Sep. 2009 - Apr. 2013
- Taught Basic Computer Science courses for B.Sc and F.Sc level
- Weekly lectures to students enrolled in programming language course and introductory physics course
- Explained complex concepts in small group setting; grade assignments and examinations.
- Held office hours for individual student discussion
- Responsible for 1-hour lecture and supervision of 3-hour laboratory
- Won the 2nd prize in final evaluation.

iSOFT Technology
Sr. Software Engineer

Lahore, Pakistan
Jan. 2006 - Sep. 2009
- Design, develop and implement applications that support day-to-day operations.
- Investigate, analyze and make recommendations to management regarding technology improvements, upgrades and modifications.
- To lead and manage a project team of technical engineers (including both designers and developers) in order to deliver project solutions on time and budget.
- Novel application of sophisticated quantitative analysis and modeling techniques to new projects.
- Analyze and Design and prepare a work plan of a new project.
- Development of algorithms for a new projects and verify those algorithms and responsible for the acquisition, setup, and administration of all hardware and software systems.

Software Development Experience

Online Business Solution (Premier Paper Mills)
Principal Software Engineer

Lahore, Pakistan
Mar. 2006 - Sep. 2006
- The Premier Paper Mills (PPM) is a big organization in Lahore, Pakistan, in terms of paper production and distribution. The Online Business Solution is an automated system developed for integrating all the workflow going-on related to Sales and Stock Management System. This system provides different services, e.g. Sales, distributed application and Stock Management.
- **Technologies:** Java Technologies (Servlet, JSP, Struts, Hibernate), My Eclipse, Oracle 9i, Rational Rose, Microsoft Project.

MIS - Yasir Ikram Textiles
Principal Software Engineer

Lahore, Pakistan
Sep. 2006 - Sep. 2007
- Yasir Ikram Textiles are the one of popular textiles in Gujranwala, they have imported all textile machines from abroad, they have three different sites but they need a system for their weaving and spinning section in which their requirements were following:
  - Employees Management system
  - Accounts System
  - Sales System
  - Payroll System
  - Reporting
- **Technology:** Java Technologies, Java, JDBC, Win XP, SQL Server

Software Solution - PNS Shifa Medical Store.
Principal Software Engineer

Lahore, Pakistan
Jul. 2007 - Mar. 2008
- As a Navy Medical Store in Karachi, I developed a brief system for this medical store, brief in a sense not so much components but there was a big task of handling customers because customers are of two types there army, civil than calculating the monthly expanse for army customers against their given budget.
  - Employees Management System
  - Accounts System
  - Sales System
  - Payroll System
  - Reporting
- **Technologies:** Java Technologies, Java, JDBC, Win XP, SQL Server

MIS for PPM (Premier Paper Mills Pvt. Ltd)
Principal Software Engineer

Lahore, Pakistan
Mar. 2008 - Aug. 2008
- The Premier Paper Mills (PPM) is a big organization in Lahore, Pakistan in terms of paper production and distribution. MIS makes sure the smooth and secure information flow among all the functional units/modules of the organization. Following modules are developed by us.
  - Employees Management System
  - Accounts System
  - Gate. (Items registration).
  - Payroll System
  - Scale (Vehicles Weight).
  - Reporting
- **Technologies:** Java Technologies, Java, JDBC, Win XP, SQL Server

Inventory system (Ruby Textile Mill Pvt. Ltd.)
Principal Software Engineer

Lahore, Pakistan
Sep. 2008 - Jul. 2009
- The Ruby Textile Mill has been producing fine quality fiber cloths for about 8 years. The system is developed as sales-purchased modules as a desktop application.
  - Employees Management System
  - Accounts System
  - Gate. (Items registration).
  - Payroll System
  - Reporting
- **Technologies:** Java Technologies, Java, JDBC, Win XP, SQL Server

Advising Students

Undergraduate students of Faculty of Information Technology

University of Central Punjab, Lahore

1. Content wise Data Management – (2013 – 2015)
2. Computer based Emulator to Control Android Phone (CECAP) – (2013-2015)
3. University level - Plagiarism Detector – (2013 – 2015)
4. iOS Game - 3D Para-glider – (2013 – 2015)
5. SMART EYE - Portable Scanner – (2013 – 2015)
6. Multiplayer Poker – (2014 – 2015)
7. Safe Player – (2015 – 2016)
8. Eligibility Finder – (2015 – 2016)
9. Knockout Enemy – (2015 – 2016)
10. Battle with Zombies – (2014 – 2015)
11. Eligibility Finder – (2015 – 2016)
12. FYP Evaluator – (2016 – 2017)
13. ROAD TRAFFIC MONITORING SYSTEM USING COMPUTER VISION – (2016 – 2017)
14. AD'S CAFE – (2016 – 2017)
15. Content Wise Video Classification – (2016 –2017)
16. Fraggie Notifier – (2016 – 2017)
17. ORDEREASE – (2017 – 2018)
18. HYREMEI – (2017 – 2018)
19. UNDERSTANDING OF HUMAN ACTIONS FOR SMART VEHICLES – (2017 – 2018)
20. SCHOOL ADVISOR – (2017 – 2018)
21. GOCART – (2017 – 2018)
22. SMART BOT – (2017 – 2018)
23. RENT ADVISOR – (2017 – 2018)
24. SKIN CANCER DETECTOR – (2017 – 2018)
25. LEARNING BASED AUTOMATED HUMAN TRACKING SYSTEM – (2017 – 2018)
26. AGRICULTURE IOT – (2017 – 2018)
27. TEAM-X – (2017 – 2018)
28. MOVEMENT DETECTION – Human Action detection using deep learning (2018 – 2019)
29. SHIP DETECTION – ship detection using deep learning with data-set SAR Images (2018 – 2019)
30. CANCER HISTOPHATHOLOGICAL IMAGE CLASSIFICATION BY DEEP LEARNING – breast cancer detection using deep learning with BreakHis data-set(2018 – 2019)
31. KYN (KNOW YOUR NEIGHBOR) – an android app to communicate with neighborhoods regarding societies problems (2018 – 2019)
32. APIFY – a web development framework: it will help regarding different integration problem of different libraries and with apps. (2018 – 2019)
33. EASY PRESCRIPTION READER – Often times we have prescriptions lying around our home and we want to check what the names of these medicines are but the writing is completely unreadable by a normal person except a physician or a pharmacy clerk. (2019 –)
34. Haroof-e-tahaji Letter Recognizer – Our objective is to create a mobile app (iOS) that will capture an image and then digitized version of the document/image. We are covering basic Haroof-e-Tahajii letters that are 38 Letters. This will help developers to make different apps related to Urdu as translation apps, billboard, scanner (Urdu PDF), Urdu editing tools which will increase the level of Urdu language.
35. Real Time Object Finder
36. Banner Curve-Text Detection
37. Text-2-Image Generation
38. Object Localization

Certificates

Big Data and Hadoop *Udemy*
2016

- Understanding of Big Data problems with easy to understand examples.
- Future of Data and What triggered Big Data Technologies

Hadoop, MR, Hive and Spark *Udemy*
2016

- Bigdata and Hadoop Ecosystem
- Hive, Spark and Storm

Introduction to Python *Udemy*
2016

- Basic Python
- OpenCV, scikit-learn, numpy

Presentation

How to Research

NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCES *Jan, 2012*
- Importance of LaTeX
- Imporance of Research Paper & Citation

A Machine Learning method for Journal Classification

NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCES *Dec, 2012*
- Importance of Machine Learning Methods
- Disadvantages of Journal citations / self citations
- Explain current approach of Journal citations

IEEE, Intellisys Conference 2018, 6-7 September 2018 – London, United Kingdom

RESEARCH ARTICLE – PRESENTATION *Sep, 2018*

Writing

Tutorial guides for software configurations

FOUNDER & WRITER *Jan. 2012 - PRESENT*
- Formal Specification – SPIN
- Java Path Finder (JPF)
- Hadoop configuration
- LaTeX installation and Configuation

University of Central Punjab, Lahore *Pakistan*

UNDERGRADUATE STUDENT REPORTS *Jul. 2013 - PRESENT*
- Drafted reports about IT trends and issues in students FYPs.

Program Committees

INTERNATIONAL

2017-2020	**Member of Program Committee**, International Conference on IT Convergence and Security (ICITCS 2017)	*IEEE and Spring-er*
2018-2020	**Member of Program Committee**, IEEE Symposium on Computer Applications & Industrial Electronics (ISAAIE 2018)	*IEEE*
2019-2021	**Member of Review Committee**, Journal of Intelligent & Fuzzy Systems (JIFS)	*IOS Press*
2019-2021	**Member of Review Committee**, IEEE Access	*IEEE*

DOMESTIC

2017-2019	**Judge**, SOFTEC – National University of Computer & Emerging Sciences, Lahore	*FAST-NUCES*
2015-2019	**Judge & Member**, ACM Programming Competition	*University of Central Punjab, Lahore*
2014-2019	**Head of Exam Committee**, Organizing & Supervision of department level Final and Mid term exam	*University of Central Punjab, Lahore*
2014-2019	**Advisor of Registration Committee**, Advising BS/MS students according to the HEC BSCS course plan.	*University of Central Punjab, Lahore*

REFERENCES

Dr. Adnan N. Qureshi *University of Central Punjab, Lahore*

ASSISTANT PROFESSOR/ HEAD OF DEPARTMENT
- Faculty of Information Technology,
- dr.qureshi@ucp.edu.pk

Dr. Zeeshan Ali Rana *National University of Computer & Emerging Sciences*

ASSISTANT PROFESSOR
- Department of Computer Science
- zeeshan.rana@gmail.com

Dr. Mohammad Nauman *National University of Computer & Emerging Sciences*

ASSOCIATE PROFESSOR
- Department of Computer Science
- nauman@csrdu.org