

# Academic Curriculum Vitae



## Personal Information:

**Dr. ABBAS Mohamad Ali**

**Assistant Professor, Salahaddin University-Erbil, Hawler, Kurdistan**

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**Mobile : +9647504793738**

## Education:

**B.Sc. Computer Science**

**M.Sc. Computer Science**

**Ph.D. Computer Science – Artificial Intelligence-Computer vision**

[https://www.researchgate.net/profile/Abbas\\_Mohamad](https://www.researchgate.net/profile/Abbas_Mohamad)

<https://sites.google.com/a/su.edu.krd/abbas-mohamad-ali-mohamad/>

## Employment:

- 1) Head of EEE Dept , in College of Engineering, Bright Star University , Libya, 1995-2000.
- 2) Instructor in college of science and Engineering , IT Dept, Jordan, 2000-2006.  
Taught courses: Object-oriented Programming , Logic Design, Computer Architecture, AI.
- 3) Staff Member, and Head of Software Engineering Department, Salahaddin University-Erbil, Hawler, Kurdistan. From 2006 – till now

## Qualifications:

- **Degree:** Philosophy Doctoral Degree (*Ph.D.*) in Computer Science, College of Science and Technology, FTSM, UKM, Malaysia, **2009-2013 Title of thesis:** Soft Assignment visual descriptors for visual place recognition.
- **The Abstract:** Upon increasing the popularity of using the Hard Bag of Features (HBOF) for accurate object and place categorization problem, there are some issues which are still being scrutinized. In fact, most of the previous researches in place recognition area are based on using Histogram descriptors. Based on the literature, these methods have several issues such as the inability to include spatial relation among the local appearance features for representing the scene image in a more informative way. Therefore, the main objective of this research is to improve the performance of the HBOF in visual place recognition by developing spatial relations for Soft assignment features. These features extracted by measuring the distances of patches from the centroids of codebook constructed by clustering SIFT features by K-means. The covariance of minimum distance (CMD) with whitening filters and some normalization parameters are used to increase the accuracy performance. The visual place confusion has been decreased by implementing Entropy of covariance feature vectors (ECV) which is investigated alone and combined with the edge histogram descriptors (EHD) using the conceptual semantic representation. To demonstrate the effectiveness of the proposed approaches in visual place

recognition, several experiments have been setup such as CMD, ECV, and Semantic in order to evaluate the accuracy rate. Practically, several comparative studies were conducted with other related approaches namely a conventional BoW or HBOF, Minimum distance table, and Covariance of Distance table. The proposed methods have been evaluated based on different datasets such as IDOL and on real images from a handheld camera taken for some places in FTSM-UKM. Based on the obtained results, the combined features of EHD and ECV bring a significant improvement in the classification accuracy rates up to 98.6% and 93.423% for IDOL and FTSMUKM dataset respectively.

#### **PROFESSIONAL MEMBERSHIPS & AFFILIATIONS:**

- A member of Institute of Electrical and Electronics Engineers (IEEE).

#### **RESEARCH AND SCHOLARLY ACTIVITIES:**

- The development of Machine Learning (Neural Networks, KNN, Support Vector Machines)
- Learning Algorithms, Back propagation Learning Algorithms, Nearest Neighbor Algorithm, Back Propagation Through Time, Real-Time Learning Algorithms.
- The field of Object and place recognition in AI, Digit Recognition Systems, Handwriting Recognition Systems, and Robot Localization and Mapping(SLAM).

## **Publications:**

1-Abbas M. Ali, 1994, "Simple Conditional Sentences Arabic Parses", AlNahrain Univ., Baghdad.

- 2-Abbas M. Ali,1996,“Expert Database System Application”  
Annual Symposium, Bright Star University of Technology,  
1(1):70-75
- 3-Abbas M. Ali and etc, 2005,“A New Database Scheme  
Arabic Handwriting Recognition By Hopfield Neural  
Networks Algorithm”, Journal of computer Science.1(3): 203-205.
- 4-Abbas M. Ali, and etc , 2005 “Detection of Parallelism in  
sequential programs based on functional partitioning”, 2004, Information  
Technology journal, Asian Network for Scientific information , 4(4):118-124.
- 5- Abbas M. Ali, “A New Database Scheme Urdu Handwriting  
Recognition By Neural Networks Algorithm”, AISECT 2004,  
Bhopal, INDIA,Conference of computer Science. AISECT  
Book,Volume-II
- 6- Abbas M. Ali and etc, 2005,“The use of Neural Networks to recognize the  
parts of the computer motherboard”, 2005, Journal of computer  
Science.3(1):112-116.
- 7- Abbas M. Ali and etc, 2006,“An Efficient Object Segmentation in Lab  
Security” , Role of Computer and Its Effects On Development  
(RCED’05), AlHussein Bin Talal Univ. Conference ,1(2):208-213.
- 8- Abbas M. Ali and etc, 2007,“On Line Kurdish Character Recognition using  
Genetic Neural Network”, Salahalddin university Journal.
- 9- Abbas M. Ali, Md Jan Nordin, Azizi Abdullah Multi Spatial Features of  
Discrete Image Scene for Indoor Localization. Archives Des Sciences,65(7):184-  
194, 2012.

- 10- Abbas M. Ali, Md Jan Nordin, Azizi Abdullah , A Spatial Visual Words of Discrete Image Scene for Indoor Localization, Research Journal of Applied Sciences, Engineering and Technology, 7(14): 2806-2812, 2014.
- 11- Abbas M. Ali and Md Jan Nordin. SIFT based monocular SLAM with multiclouds features for indoor navigation IEEE Region 10 Annual International Conference, Proceedings TENCON, Japan, Fukuoka, 2010, pp. 2326-2331.
- 12-Abbas M. Ali and Md Jan Nordin. Indoor Navigation to Support the Blind Person Using True Pathway within the Map. Journal of Computer Science 6 (7):740-747, 2010.
- 13-Abbas M. Ali and Md Jan Nordin. Indoor navigation to support the blind person Using weighted topological map Proceedings of the 2009 International Conference on Electrical Engineering and Informatics, ICEEI 2009, pp. 68-72.
- 14- Md Jan Nordin and Abbas M. Ali. Indoor navigation and localization for visually impaired people using weighted topological map. Journal of Computer Science 2009, 5(11):883-889.
- 15-Abbas M. Ali and Md. Jan Nordin. Vision based reconstruction multiclouds of scale invariant feature transform features for indoor navigation. Journal of Computer Science 2009, 5(12):948-955.
- 16- Abbas Mohamad Ali and Shareef Maulod Shareef, Spatial Representation to Support Visual Impaired People, Journal of Computer Science 2015, 10(12):748-755.
- 17- Abbas Mohamad Ali and Tarik Rashid, Place Recognition Using Kernel Visual Keyword Descriptors, SAI Intelligent Systems Conference 2015 (IntelliSys 2015), IEEE Xplore: 21 December 2015, DOI: [10.1109/IntelliSys.2015.7361253](https://doi.org/10.1109/IntelliSys.2015.7361253)
- 18- Abbas Mohamad Ali , Shareef Moulod Shareef and Tarik Ahmed Rashid,

Automatic license plate recognition in Kurdistan Region of IRAQ, JZS (2015)

17-3 (Part-A)

19- Abbas M. Ali, Moayad Y. Potrus, and Amin S. Mohammad , Multi class vechile type's recognition system using spatial visual words with minimized feature set, 3<sup>rd</sup> Internation Engineering Conf.ondevelopment in Civil &Computer Eng. Application, 2017.

## **FURTHER RESEARCH INTEREST**

Using of microcomputer in vision, & extracting the objects from the image for visual place recognition.

## **TEACHING COURSES**

### 4) Subjects

- Software Engineering Department, College of Engineering, Salahaddin University, Hawler, Kurdistan. Committed to teach most of the subjects that are related to my field of specialty at the undergraduate level. These subjects are Artificial Intelligence, Database Systems, Microprcoessors , Computer Architecture , Compilers, Object Oriented Programming, and Engineering Projects.
- Computer Science Department, College of Engineering, Koya University, Hawler, Kurdistan. Committed to teach of some subjects that are related to my field of specialty at the undergraduate level. These subjects are Artificial Intelligence, Compilers, and Engineering Projects.
- Investigative M.Sc. Software Engineering Department, College of Engineering, Salahaddin University, Hawler, Kurdistan. Committed to test most of the subjects that are related to my field of specialty at the postgraduate level.

- Testing M.Sc. Computer Science, College of Education, Salahaddin University, Hawler, Kurdistan. Committed to test most of the subjects that are related to my field of specialty at the postgraduate level. Subjects are Artificial Intelligence and Operating system
- Scientific Committee member at Software Department, College of Engineering, Salahaddin University,

## COURSES TAUGHT

- 1) Computer Organization
- 2) Digital Electronics & Logic Design 3) Computer Languages (Basic, Pascal,C, ...)
- 4) Operating System .
- 5) Data Acquisition & Information System
- 6) Microcomputer and Applications 7) Microprocessors.
- 8) Microprocessors Applications.
- 9) Database Techniques with Microsoft Access
- 10) Data Structure by using Tpasal
- 11) Programming in C++ language
- 12) MultiMedia System
- 13) Computer Architecture
- 14) System Software
- 15) Computer Skill1 (windows & office) 16) Computer Skill2 (VB 6).
- 17) Compiler Construction.
- 18) Special topics (Neural Network).
- 19) Artificial Intelligence.
- 20) Theory of Computation

# WORKING EXPERIENCE

1) Bright Star University (Brega, Libya) 1995-2000

Position: Head of the Dept, Staff Member and Instructor, Electrical and  
Electronical Department, College of Engineering , Libya.

2) Al Hussein Bin Talal University (Maan, Jordan) 2001-2006            Position: Staff  
Member and Instructor, Software Engineering Dept, College of Science and  
Engineering , Jordan.

3) Koya University (Hawler, Kurdistan)- Part time based 2007-2008  
Position: Instructor

4) Salahaddin University (Hawler, Kurdistan) 24/04/2010-Present

Position: Instructor

## CORE SUBJECTS

- C/C++, Visual Basic, Pascal, Fortran Programming, Prolog languages, Advanced Object Oriented Software Design, Data Structures and Algorithms.
- Artificial Intelligence, Rule Based Systems, Genetic Algorithms, Fuzzy Logics, Expert System and Searching Algorithms.
- Computer Graphics, Computer Aided Design (2d and 3d)
- Introduction to Databases, SQL, MySQL, MS SQL Server, Information system.
- Computer Systems, System Software and Architecture, Data Acquisition for Computing.



- Data Communications and Networks, Operating Systems and Concurrency, Project Planning and Management.
- Knowledge Engineering, Pattern Recognition and Neural Networks, Support Vector Machines, Operational, Research Methodology, Independent Research Project.

## LANGUAGES

English, Kurdish, Arabic

## REFERENCES

- **Dr. Moayad Yousif Potrus (Bsc, MSc, PhD)**  
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Salahaddin, Iraq.  
Email: [moayad.potrus@su.edu.krd](mailto:moayad.potrus@su.edu.krd)
- **Dr. Shareef M Shareef (BSc, MSc, PhD) Senior Lecturer (Former Head of Department)**  
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