

## Resume'

**Name** : ARUN KUMAR MAJUMDAR  
**Date of Birth** : July 1, 1948  
**Citizenship** : INDIA

### **Address :**

P-22 Sahitya Parishad Street, Kolkata 700006, INDIA.

Tel: +91-33-25557061

Cell: +91-9434013847

E-Mail: akmajumdar@hotmail.com

### **Education:**

B. SC. (Honours) in Physics from Presidency College, Calcutta University, 1965.  
B. Tech, M. Tech and Ph. D degrees in Applied Physics from the University of Calcutta in 1967, 1968 and 1973, respectively.

A second Ph. D. degree in Electrical Engineering from the University of Florida, Gainesville, U. S. A., in 1976.

### **Work Experience:**

Professor of Eminence and Pro-Vice Chancellor, Adamas University, Barasat-Barackpore Road, Kolkata 700126, from October 2016 to March 15, 2019.

Professor, Computer Science and Engineering Department, Indian Institute of Technology, Kharagpur, from 1984 till superannuation in June 2013. Re-employed as Professor from July 2013 till June 2016.

Joined IIT Kharagpur as an Assistant Professor in the Electronics and Electrical Communication Engineering Department in 1980.

With leave from IIT Kharagpur, served as a Visiting Professor in the University of Guelph, Ontario, Canada in 1986-87, and in the George Mason University, Fairfax, Virginia, USA, in the summer of 1999 and 2006.

Earlier, worked in the Indian Statistical Institute, Calcutta (1977-78), and Jawaharlal Nehru University, New Delhi, (1978-1980) as a faculty member.

### **Administrative Experience:**

**Pro-Vice Chancellor Adamas University**, since October 2016.

**Deputy Director, Indian Institute of Technology**, from July, 2009 to August 2012.  
Responsible for General Administration of the Institute.

**Dean (Faculty and Planning )**, IIT Kharagpur : from March 2002 to February 2005.

Was involved in faculty recruitment and all faculty related matters. Also took leading role in planning and development.

**Head of the Computer Science and Engineering Department, IIT Kharagpur :** from 1992 to 1995 and again from 1998 to May 2001. Was involved in curriculum and laboratory development, regular departmental administration and several project executions.

**Head, School of Medical Science and Technology, IIT Kharagpur:** from August 2005 to August 2006.. Besides regular administrative work, was involved in curricular development and setting up laboratories in the School in its formative year.

**Head of Computer and Informatics Center, IIT Kharagpur:** from 1998 to 2002. Took part in expanding Institute campus local area network and setting up the computing infrastructure.

#### **Research Interest:**

- Data and Knowledge Based Systems
- Machine Intelligence
- Image Processing and Multimedia Systems
- Information Systems Security
- Medical Informatics and Decision Support Systems
- VLSI Design Automation

#### **Professional/ Society Membership :**

<b>Fellow</b>	<b>Indian National Academy of Engineering</b> Member Governing Council of INAE (from 2003 – 2006),
<b>Fellow</b>	<b>Institution of Engineers (India)</b>
<b>Senior Life Member</b>	<b>I. E. E. E. (U. S. A.)</b>

#### **Major Scientific Contributions:**

The focus of research can be broadly classified into two major disciplines of Computer Science and Engineering, namely - **Information Systems Analysis and Design** and **VLSI Design Automation**. The specific areas of Information Systems that have been addressed are Data and Knowledge based Systems, Image and Video Databases, Information Security and their application to Medical Informatics and Telemedicine, Video Modeling and Processing, Object tracking in Videos, Fingerprint Classification, etc. Besides publishing a text book on Database Management Systems, several research publications on fuzzy relational databases, object oriented and active database system design, concurrency control, image and video databases have been made in journals of high impact factors, In fact, the work done (along with a Ph. D. student) on fuzzy functional dependency laid the foundation of fuzzy relational databases and is one of the most cited reference in the field. In recent years, along with a few postgraduate students and coworkers innovative schemes have been proposed

for database recovery against attacks and fraud detection, which have led to several publications in leading international journals.

In the area of Medical Informatics and Telemedicine, as a Principal Investigator of a number research projects supported by the Department of Information Technology, Government of India, a team has been formed and a laboratory has been set up in the Computer Science and Engineering Department. Based on this activity, a system called TelemediK / iMediK, for providing telemedicine services over different types of communication channel have been developed. In collaboration with WECS, Kolkata, the TelemediK system has been successfully installed and is still used in more than 25 Government Hospitals in West Bengal and Tripura. This work has received wide appreciation from physicians, medical researchers across the country and was awarded “ **National Award For Exemplary Implementation of E-Governance Initiative-2004 on Telemedicine Project in West Bengal**” from Govt. of India, and “**Skotch Challenger Award 2005**”. Professor Majumdar was a member of the Working Group on Medical Electronics and Telemedicine ‘ of the Department of Information Technology (DIT), Govt. of India and a member of the Standardization Committee on Telemedicine set up by DIT.

In VLSI Design Automation area, focus has been on development of efficient algorithms for interconnect minimization, high level synthesis, design of ASIC Chips and high throughput systolic arrays, etc. This has resulted in several publications in leading journals and conferences in this field (some which have very large number of citations. In addition to carrying out research activities in this area, from 1998 to 2009, Professor Majumdar was the Coordinator of IIT Kharagpur Resource Centre set up under the “Special Manpower Development in the Area of VLSI “ project supported by the Ministry of Information and Communication Technology, Gov’t. of India.

<b>Number of Ph. D. Theses Supervised</b>	:	17
<b>Number of Ph.D. students being supervised</b>	:	2
<b>Number of Research Publications (see Annexure) : in</b>		
	Journals	- 83
	Edited volumes	- 13
	Conferences	- 132
	Books	- 1

**Conferences Organized or Served as General /Program Committee Member/Chair, Technical Sessions Chair:**

International Conference on Information Systems Security 2005 – 2009, 2011, Indian Conference on Computer Vision and Image Processing (ICVGIP) 2008, Indian Conference on Medical Informatics and Telemedicine (ICMIT2006), International Conference on Management of Data (COMAD), IEEE Motion 2005 Workshop, International Conference on Pattern Recognition and Machine Intelligence 2005, International Conference on VLSI Design 1994, International Conference on Advances in Pattern Recognition and Digital Techniques, International Conference on Conceptual Modeling, International Conference on

Information Systems and Management of Data, International Conference on Data Engineering (ICDE – 2002), National Conference on Object Oriented Technology (NCOOT –2002), International Conference on Information Systems and Management of Data (CISMOD) 1992 and 1993, National Telemedicine Conference, Indo-French Workshop, , etc.

#### **Reviewer of Journals:**

Served as reviewers of research contributions of several international journals such as - IEEE Transactions on Computer, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Fuzzy Sets and Systems, IEEE Transactions on Neural Networks, IEEE Computer, ACM Transactions on Database Systems, ACTA Informatica, Information Science, IEE Proceedings, Electronics Letters, JIETE, Computer Science and Informatics, etc.

#### **Invited Lectures Delivered in India and abroad:**

Indian Statistical Institute, Calcutta, Department of Radio Physics and Electronics, University of Calcutta, Computer Society of India Annual Convention, Indian Institute of Technology, Madras, Andhra University, Microsoft Research, Redmond, U.S.A., HP Laboratory, Pal Alto, California, George Mason University, Fairfax, Virginia, U. S.A., University of Iowa, Iowa City, U.S.A., University of Guelph, Ontario, Canada, University of Windsor, Ontario, Canada, INRIA, France, University of South Carolina, Columbia, South Carolina, U.S.A., West Virginia University, Morgantown, West Virginia, U. S. A., Southern Methodist University, Dallas, Texas, U. S. A., etc.

#### **Principal Investigator of Sponsored Projects:**

In recent years successfully handled (some are still ongoing) several research projects (about fifteen amounting to over Rs five crore) sponsored by the Ministry of Communication and Information Technology, Govt of India, Defense Research Development Organization (DRDO), Govt of India, Department of Science and Technology (DST), Govt of India, Ministry of Human Resource Development, Govt of India, AICTE. The telemedicine system (TELEMEDIK) developed under a project sponsored by Ministry of Communication and Information Technology, Govt of India, has been successfully implemented and is being currently used in several hospitals in West Bengal and Tripura and has received number of national awards.

In addition to research projects, have successfully completed (and some are on going) several consultancy projects (about ten amounting to over Rs. one crore) sponsored by public and private sector organizations like Allahabad Bank, UCO Bank, Calcutta Stock Exchange, M. N. Dastur and Co., Bridge & Roof Co. West Bengal State Electricity Distribution Co. Ltd., etc.

#### **Academic Services Rendered to other Institutions / Universities / Organizations:**

Was a member of the Governing Council of The Indian National Academy of Engineering (INAE) from 2003-2006, and earlier as a member of the Sectional Committee on Computer Science and Engineering of INAE. Also served as Chairman of the Local Chapter of INAE.

Served as a member of the Board of Studies of Computer Science Program of several academic institutions such as REC Rourkela, Burdwan University, B. E. College, Shibpur. Was invited to be a member of faculty Selection Committees of several Universities and Institutions such as IIT Bombay, Kanpur, Guwahati, Madras, Jadavpur University, Calcutta University, BESU, Shibpur, etc. and an expert member of Accreditation Committees of AICTE.

Took active part as a member of the Standardization Committee of the Ministry of Information Technology, Gov't of India, on Telemedicine, and as a member of the Working Group on Medical Electronics and Telemedicine of the Ministry of Information Technology, Gov't of India. Currently Chairman of the Project Review and Steering Group of number of projects sponsored by Dept. of Information Technology, Gov't of India in the areas of Medical Informatics and Information Security.

A member of the IT Academic Council of the Department of Information Technology, Gov't of West Bengal and a member of the Technical Committee of Gov't of the West Bengal for implementation of state wide computer network(SWAN) in West Bengal. A member of the Board of Governors of West Bengal Electronic Industry Development Corporation(WBEIDC), Gov't of West Bengal

#### References:

1. Professor J. Mukherjee: Head, Computer Science and Engineering Department, Indian Institute of Technology, Kharagpur 721302
2. Professor D. Dutta Majumdar: Emeritus Professor, Indian Statistical Institute, 203, B. T. Road, Kolkata 700035.
3. Professor S. Jajodia: BDM International Professor, and Director Center for Secure Information Systems, George Mason University, Fairfax, VA 22030-4422, U. S. A.