Resume

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Positions

- **Director, CEO**, Intel Vision Technologies Inc. Nov,2020-current
- **Adjunct Professor**, Dept. of Electrical and Computer Engineering, University of British Columbia, Vancouver, BC, Canada.(2002-2021)
- **Professor Emeritus**, Dept. of Electrical and Computer Engineering. University of Tehran, Iran. Have been full time professor (1985-2016). Have followed academic and research activities at the department since retirement as an honorary professor.

Principle Activity Areas:

1. At Intel Vision Technologies: Outlining research and application proposals dealing with machine vision and data analysis including motion pattern recognition,data cluster analysis and data segmentation
2. Extensive teaching and admistrative /committee work functions at the University of Tehran, Iran and research at all levels, BS, Msc and PhD courses in Electrical and Computer Engineering, in Control Systems and Modeling and recently in Signal Processing and Wavelets in biomedical Engineering and related industrial applications including more than seventy student project supervision (Msc and PhD,). As an integral part of my academic activities, I have served as Principle Investigator of several funded research projects on biomedical and industrial engineering applications.

3. As an adjunct faculty member at the Electrical and Computer Engineering Dept. University of British Columbia, Canada, I have been active teaching control systems courses as well as outlining student research projects as well as projects under NSERC-IRAP project programs and seed fund alternatives. I have been serving as Investigator of funded research project of industrial engineering applications. I have also been co-supervising at the University of British Columbia, Canada

Areas of current interest

- Application of machine vision, artificial intelligence, deep learning and data clustering algorithms as applied to feature extraction, pattern recognition and classification in industrial and biomedical data analysis problems

Previous Academic and Research Positions (held in USA)

- Stanford University, Visiting Associate Professor, Dept. of Engineering Economic Systems, Control Systems Group , research on aggregation in control systems.

- University of California, Berkeley, post doctoral/Research Associate, Dept. of Electrical Engineering and Computer Science.. Research on large Scale Systems and Optimization (in collaboration with late Prof Lotfi.A. Zadeh)
- Associate Professor and Department Head (Industrial Engineering & Management Science). Fairleigh Dickinson University, New Jersey, USA. Extensive teaching and administrative work activities.
- Assistant Professor, Dept. of Operations Research and System Engineering Polytechnic Institute of Brooklyn, N.Y. (Now Polytechnic University of New York.

Invited Scholar, Research and Visiting Positions

- **Visiting DAAD Scholar,** University of Dortmund, Germany, Dept. of Computer Science, Systems Group (Genetic and Evolutionary algorithm, Chair: Prof. Schwefel)
- **Invited Senior Scholar**, Institute of Applied Mathematics, **Chinese Academy of Science,**
- **Visiting Assoc. Professor,** University of British Columbia, Dept. of Electrical Engineering during sabbatical from University of Tehran.

Funded Research Project Implementation serving as Principle Investigator (2005-2018).

- **Principal Investigator, Collaborative** project with Mofid Children Hospital, Tehran, Iran, Center for Research on Infant Health. "Application of Near Infra-Red Spectroscopy for Infant brain health monitoring using measurement of neural oxy and deoxy hemoglobin concentration". Application is now pursued by the hospital, Msc Student project was caried out and paper was published. Research work is now pursued by other faculty members in the department on which student projects have been outlined.

- **Principle Investigator**, Project with **Iranian National Science Foundation (INSF**). Project title: "Application of NIR for monitoring and measurement of blood flow and oxygen concentration in brain cells and study of parameters influencing system utilization in intensive care units of newly born infants. A PhD student project was carried out and results of study have been published (please see paper listing)

- **Principle Investigator**, Project with Industry, **National Iranian Oil Company, Falaat Gharreh Oil company** Project Title: "Application of signal processing and wavelets for analysis and pattern recognition and characterization of geophysical data ". Research report is now being used by the company on their exploration studies. PhD and Msc student projects were carried out and papers have been published)Please referto paper listing)

- **Principle Investigator**, Project with **Iranian National Science Foundation (INSF**). Project title: "Design and implementation of a wavelet-based personal identification system using iris image data" Project was successfully implemented and has been patented in Iran.

Funded Projects in Canada: carried out at University of British Columbia (2005-2010)

- **Principle Investigator**, project supported by **National Science and Engineering Research Council of Canada** (**NSERC),** Industrial Research Assistant Program **(IRAP),**

Project Title: " Design and Development of Wavelet-based Algorithm for Machine Diagnosis". This project carried out by industry (BC based **REM Technology Inc)** under NSERC-under NSERC-IRAP Program, Canada. Project was carried out in collaboration with REM technology including data collection at BCIT multicylinder gas engine on which vibration data analysis was carried out with a focus on wavelets-based data analysis. A PHD student project was also outlined and carried-out. Report of study was published as papers (please see paper listing) as well as a chapter in a book. Please refer to publication listing

Principle Collaborator in **NSERC, ENGAGE** project. Project with **McKesson Enterprise Medical Imaging Grup** of Richmond, BC Canada. Project title: *" Medical Image Enhancement of Computed Radiograms*". Focus of the project was application of wavelets for medica image enhancement. Results of the study including student research work report was made to theindustry

Membership at the Editorial Board of international and national journals.

- **The Bioinformatics Journal.** The journal is in its tenth successful year of publication, and is indexed by Scopus, Embase, Chemical Abstracts, Directory of Open Access Journals (DOAJ), Open J-Gate, Genamics JournalSeek, MathSciNet, MediaFinder®-Standard Periodical Directory, PubsHub, J-Gate and Index Copernicus since 2014.

- **Science Publishing Group (SciencePG).** Invitation to join as an editorial member in Science Publication Group journals since 2015.

Professional Society Activities including Conference Organization and invited presentations

- **General Chair and Keynote Speaker**, International Conference on Signal and Information Processing (ICSIP 2010) a joint conference by IEEE and International Association of Computer Science & Information Technology (IACSIT) held in Changsha, China, Dec 14-16, 2010
- **Invited presentation:** Title" Application of Signal Processing and Wavelets for Pattern Extraction in Epileptic Data", First Iranian Conference on Epilepsy, held in Mashad, Iran, Oct, 2011
- **Invited Presentation**, Title:" Uncertainty Reduction in Reservoir Modeling Using Wavelets", Presentation at the First International Conference on Hydraulic Fracturing, Xi'an , China, Aug 26-28, 2010

I have served as honorary as well as general chair of several international conferences including

- International Conference on Image and Vision Computing(ICIVC2011) , Xiamen China, July 2011,
- Intn'l Conference on Computing and Software Modeling(ICCSM 2011) Singapore Sept 2011
- Intn'l Conference on Embedded System and Microprocessors ICESM 2011(held in Kuala-Lumpur, Malaysia Nov 2011
- International Conference on Electronics, Nanomaterials and Component (ICENC 2012) held in Kunming, China , April 21-22, 2012.
- **Founder and First Chairman of "Iranian Society of Control and Instrument Engineers"** Served as Chair of Board of Directors, 1382-86

Graduate Student Project Supervision:

Near fifty graduate student (MSc and PhD) projects have been supervised at the University of Tehran and partly at the University of British Columbia on control systems, **wavelet-based signal processing and recently on biomedical engineering and systems.**

Patents (jointly registered patents)

- **Patent Title:**
  "METHOD AND APPARATUS FOR THE ESTIMATION OF ANESTHETIC DEPTH USING WAVELET ANALYSIS OF THE ELECTRO-ENCEPHALOGRAM"
  Patent is jointly with faculty members and graduates at University of British Columbia.
- **Patent Title:**
  "METHOD AND APPARATUS FOR THE REMOVAL OF ARTIFACTS IN ANESTHETIC DEPTHMEASUREMENTS USING WAVELET ANALYSIS OF THE ELECTRO-ENCEPHALOGRAM"
  Patent is jointly with faculty members and graduates at University of British Columbia.
- **Patent title:**
  "NIR Imaging Camera and software System for Iris-based personal Identification using Wavelets"
  Patent is jointly with Iran National Science Foundation (INSF) and project collaborators. Patent is now registered in Iran, Sept. 2010.

  Patent title :
  Application of Near-Infra-red spectroscopy on neural oxygenation using laser diodes
  Patent has now been registered with the Iranian Patent office (2021)

Books Reviewed:

- "Control Systems Engineering" Author: Benjamine Kuo, published by John Wiley, reviewed in 1998, Was nominated as a candidate for coauthoring of the eighth edition. An extended review was submitted to John Wiley,
- **Wavelets in Geodesy and Geodynamics, by Volfgand Keller, .** translated by A Safari and M Sharifi, University of Tehran, Dept of Remote Sensing, Published by University of Tehran Publishing Company.

Reviewer of papers for journals and conference publication

- European Journal of Signal Processing, EUROSIP
- Journal of Franklyn Institute
- Journal of Integrated Computer Aided Design, ICAD
- International Journal of Digital Signal Processing(DSP)
- Journal of Vibration and Acoustics
- Iranian Control Systems Journal of Iranian Society of Instrument and Control Engineers
- Journal of Applied Soft Computing

- IEEE EMBC Biomedical Annual Conferences

Book Published/Translated

Title: Wavelets, Theory and Application " Author: Goerge Stark, Deutch Elsvier Publication, 2003 Book translators: Hossain Ahmad-Noubari, Javad Abdi, Published by: Azad University, Dec 2009.

Published paper as Book Chapter

- R. Tafreshi, F. Sassani, H. Ahmadi, G. Dumont, "Entropy Measure and Energy Map in Machine Fault Diagnosis", Integrated Systems, Design and Technology, Knowledge Transfer in New Technologies, Madjid Fathi (Ed.), Springer, ISBN 978-3-642-17383-7, P243 (2011).

Education :

Ph.D. Electrical and Computer Engineering (Systems and Control), **Polytechnic Institute of Brooklyn (now Polytechnic University of New York**), N.Y.1970. Held fellowship from USA for PhD studies.
M.S. Mechanical Engineering (Systems and Control),**Pennsylvania State University, PA**. included course work and thesis.
B.S. Electrical Engineering, Faculty of Engineering, **University of Tehran, Iran. First ranking graduate student, winner of government scholarship for graduate studies in USA**

Publication

Near one hundred journal and conference papers have been published. Please see attached sheet on partial list