

Alireza Vard

A) Personal Information

- Ph.D. in Computer Engineering
- Assistant Professor at Department of Biomedical Engineering, Isfahan University of Medical Sciences
- Email: vard@eng.ui.ac.ir, vard@amt.mui.ac.ir, alivard@gmail.com
- Address: Department of Biomedical Engineering, Faculty of Advanced Medical Technology, Isfahan University of Medical Sciences, Isfahan, 81745, Iran

B) Current Activities:

- Assistant Professor at Department of Biomedical Engineering, Isfahan University of Medical Sciences.
- Vice-Dean for Education, Department of Biomedical Engineering, Isfahan University of Medical Sciences.
- Head of the Center for Information Technology at Faculty of Advanced Medical Technology, Isfahan University of Medical Sciences.
- Member of Medical Signal and Image Processing Research Council Research Center at Isfahan University of Medical Sciences.

C) Educational History

- **Ph.D. in Computer Engineering**, University of Isfahan, Isfahan, Iran. (July 2012)
- **M.Sc. in Computer Engineering**, University of Isfahan, Isfahan, Iran. (August 2007)
- **B.Sc. in Software Engineering**, University of Isfahan, Isfahan, Iran. (May 2003)

D) Honors

- ☑ First rank in Ph.D., Computer Engineering, University of Isfahan. (My GPA is “**19.51/20**” which is the highest GPA among all Ph.D. graduates in history of computer engineering department, University of Isfahan)
- ☑ First rank in M.Sc., Computer Engineering, University of Isfahan, Isfahan
- ☑ Second rank in B.Sc., Software Engineering, University of Isfahan, Isfahan

E) Research Activities

1- Theses

- PhD thesis: “Segmentation and Object Extraction in Texture Images Using Adaptive Active Contour Models” (**Grade: 19.61/20**)
- M.Sc. thesis: “Improvement of Tracking Methods Performance based on Active Contour Models in Texture Environments” (**Grade: 19/20**)
- B.Sc. project: “Design and Implementation of Management Information System (MIS) for Organization of Planning and Research of Isfahan Municipality” (**Grade: 20/20**)

2- Publications:

2-1-ISI Journal papers:

1-Alireza Vard, Kamal Jamshidi and Naser Movahhedinia, “Small object detection in cluttered image using a correlation based active contour model,” *Pattern Recognition Letters*, Vol. 33, No. 5, pp. 543-553 April 2012.

2-Alireza Vard, Kamal Jamshidi and Naser Movahhedinia, “An automated approach for segmentation of intravascular ultrasound images based on parametric active contour models,” *Australasian Physical & Engineering Sciences in Medicine* Vol.35, No.2, pp. 135-150, 2012

3-Alireza Vard, Amirhassan Monadjemi, Kamal Jamshidi and Naser Movahhedinia, “Fast texture energy based image segmentation using Directional Walsh–Hadamard Transform and parametric active contour models,” *Expert Systems with Applications*, Vol. 38, No. 9, pp. 11722-11729, Sept. 2011.

4-Alireza Vard, Payman Moallem and A. R. Naghsh Nilchi, “Texture-Based Parametric Active Contour for Target Detection and Tracking,” *International Journal of Imaging Systems and Technology*, Vol 19, No. 3, pp.187–198, Sep. 2009.

5-Alireza Vard, Ahmad Reza Naghsh Nilchi and Payman Moallem, “Object Detection and Image Segmentation using Texture Pressure Energy in Parametric Active Contour Models,” *Journal of the Chinese Institute of Engineers*, Vol. 31, No. 4, pp. 649-657, Jun. 2008.

6- Zahra Saeezadeh, Alireza Mehri, Ardeshir Talebi, Hossein Rabbani, Omid Sarrafzadeh and Alireza Vard, “Automatic Recognition of Myeloma Cells in Microscopic Images using Bottleneck algorithm, Modified Watershed and SVM Classifier,” *Journal of Microscopy*, Vol. 261, Issue 1, pp. 46–56, 2016.

7- Alireza Vard, “A New Combining Active contour Model for Segmenting Textured Image with Low Contrast and High Illumination Variations,” *submitted to Signal, Image and Video Processing*, Feb. 2016.

2-2-Conference papers:

1-Alireza Vard, P. Moallem, A. R. Naghsh Nilchi, “Applying Texture Pressure Energy to the Active Contour Models for Tracking Texture Object in the Texture Background,” *In Proceeding of 4th Iranian Conference on Machine Vision and Image processing*, Ferdowsi University of Mashhad, Mashhad, Iran, Vol. 1, pp. 349-356, Feb. 2007.

2- **Alireza Vard**, A. R. Naghsh Nilchi and P. Moallem, "Applying Texture Pressure Energy in the Parametric Active Contour Models for Texture Object Detection and Image Segmentation," *International Conference on Computer, Information, and Systems Science, and Engineering*, Barcelona, Spain, 2007.

3- Membership in Research Groups:

- Head of research group in "Game & Treatment" at Department of Biomedical Engineering, Isfahan University of Medical Sciences from April 2016 to current
- Head of research group in "Software Development for Medical Image Processing" at Department of Biomedical Engineering, Isfahan University of Medical Sciences from January 2014 to 2016
- Member of research group in "Microscopy Image Processing" at Department of Biomedical Engineering, Isfahan University of Medical Sciences from March 2013 to current
- Member of research group in "Intravascular ultrasound (IVUS) Image Processing" at Department of Computer Engineering, University of Isfahan from March 2011 to March 2012

F) Teaching Experiences

1- Graduate

- "Advanced Digital Image Processing" at Department of Biomedical Engineering, Isfahan University of Medical Sciences (Fall 2013, Fall 2014, Spring 2015 and Spring & Fall 2016)
- "Special Topics in Biomedical Engineering (software development for medical image processing)" (Spring 2015 and Spring & Fall 2016).
- "Digital Image Processing" at Department of Biomedical Engineering, Isfahan University of Medical Sciences (Spring 2014).
- "Digital Signal Processing" at Department of Biomedical Engineering, Isfahan University of Medical Sciences (Fall 2013, Spring 2014, Fall 2014 and Fall 2015).
- "Seminar" at Department of Biomedical Engineering, Isfahan University of Medical Sciences (Fall 2014, Spring 2015 and Spring 2016)
- "Fundamental Programming in MATLAB" at Department of Biomedical Engineering, Isfahan University of Medical Sciences (Fall 2015 and Fall 2016)

2- undergraduate

- "Engineering Mathematics" at Department of Computer Engineering, University of Isfahan (Spring 2008 to Fall 2010)
- "Computer Architecture" at Institute of Higher Education Safahan (Spring 2008)
- "Computer Programming (C++)" at Department of Computer Engineering, University of Isfahan (Fall 2007)
- "Introduction to Computer" Department of Computer Engineering, University of Isfahan (Spring 2008)
- Teaching Assistant "Software Engineering" Department of Computer Engineering, University of Isfahan (Fall 2004 to Fall 2005)

G) Practical Experiences

- ✓ Border extraction and calcified plaque detection in intravascular ultrasound (IVUS) images
- ✓ Design and implementation of a software system for detecting and extracting of buildings from satellite images
- ✓ Analysis, design and implementation of management information system (MIS) for organization of planning and research of Isfahan municipality
- ✓ Analysis, design and implementation of a database for the contract bureau of Isfahan municipality

G) Software & Programming Language Skills

- 1- Pascal, C, C++,
- 2- Visual C++, Visual C#
- 3- MATLAB
- 4- OpenCV
- 5- Qt
- 6- Unity
- 7- Rational Rose

H) Research Interests

- ✓ Game Design and Programming
- ✓ Serious Game for Health
- ✓ Serious Games for preventive care, diagnosis, treatment and clinical skills learning & training
- ✓ Application of Virtual and Augmented Reality in Serious Games
- ✓ Medical Image Processing
- ✓ Computer Vision
- ✓ Development of Medical Image Processing Software

I) References

- **Prof. Dr. Hossein Rabbani**, Department of Biomedical Engineering, Isfahan University of Medical Sciences, Isfahan, Iran. Email: h_rabbani@med.mui.ac.ir
- **Prof. Dr. Saeid Sadri**, Department of Electrical and Computer Engineering, Isfahan University of Technology, Isfahan, Iran. Email: sadri@cc.iut.ac.ir
- **Prof. Dr. Kamal Jamshidi**, Department of Computer Engineering, University of Isfahan, Isfahan, Iran. Email: jamshidi@eng.ui.ac.ir
- **Prof. Dr. Naser Movahedinia**, Department of Computer Engineering, University of Isfahan, Isfahan, Iran. Email: naserm@eng.ui.ac.ir