

In the Name of God

CV

NASIM DADASHI SEREJ

Personal Information

Date of Birth: 08/09/1980

Current mission: Senior Researcher

Address: Institute for Advanced Medical Technologies(IAMT), Tehran University of Medical sciences, Tehran, Iran.

Medical Image and signal processing center, Department of Advanced Medical Technologies, Isfahan University of Medical Science, Isfahan, Iran.

Nationality: Iranian

Marital Status: Married

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Academic Background

2010 to 2015 Physics and biomedical Engineering Group, Faculty of Medicine
Tehran University of Medical Sciences

Ph.D. Degree student in Biomedical Engineering **18.86/20, Ranked First.**

Thesis: Adaptive Registration of Endoscopic Videos to MDCT images for Error Reduction in ENT Navigation Systems.

Thesis Grade 19.92/20

2007 to 2010 Physics and biomedical Engineering Group, Faculty of Medicine
Isfahan University of Medical Sciences,

M.Sc. Degree in Biomedical Engineering **17.63/20, Ranked First.**

Thesis: Extraction of cardiac motion field from CMRI images using similarity measures.

1999 to 2003 Faculty of Electrical Engineering
Sahand University of Technology,
B.Sc. Degree in Biomedical Engineering

Thesis: Simulation the Effects of LASER on Human Tissues.

1999 Farzanegan High school (SAMPAD)
Tabriz, Iran
Diploma in Physics and Mathematics

RESEARCH INTERESTS

Image and Video Processing, 3D Computer Vision with primary emphasis on 4D reconstruction, pose estimation, , motion estimation,4D object tracking, 3D SLAM, object recognition, virtual reality, image mosaicking.

Multiscale analysis with application to image enhancement, pattern recognition, texture segmentation and classification.

RESEARCH PROJECTS

1. “Designing and Implementing a new Method and Platform for Estimation of Brain shift in Image Guided Surgery systems using Intra-Operative Stereo Image”, Tehran University of Medical Sciences,2012.
2. “3D Extraction of Anatomical Structures of Nasal Cavities Using Endoscopic Data” RCSTIM, 2012.
3. “Evaluation of Intraoperative endoscopic video data registration to preoperative CT images in image guided surgery systems” RCSTIM, 2013.

International Patent

1. US Patent **61/612-335**” Method and Apparatus for estimation of soft tissue deformation based on intraoperative stereo image features and point based registration”, Alireza Ahmadian, Saeed Karimifard, **Nasim Dadashi Serej**, Ahmad Kolahi, Saeed Sarkar.
2. US Patent **61/691-129** “A Method and Apparatus for Reduction of Registration Error in Image Guided Surgery Systems”, Alireza Ahmadian, **Nasim Dadashi**, Saeed KarimiFard, Saeed Mohaghegi, Farzam Farahmand.

Publications

Journal Papers

1. (ISI, IF=1.3)A. Ahmadian, **N. Dadashi Serej**, S. Karimifard, P. Farnia, “An efficient method for estimating soft tissue deformation based on intraoperative stereo image features and point-based registration” International Journal of Imaging Systems and Technology, vol. 23(4), pp. 294- 303, 2013. DOI: 10.1002/ima.22064
2. (ISI, IF=1.7) **N. Dadashi Serej**, A. Ahmadian, S. Mohagheghi, S. M. SadreHoseini,“A New Projected Landmark Method for Reduction of Registration Error in Image Guided

Surgery Systems” *International Journal of Computer Assisted Radiology and Surgery*, 2014.

3. (ISI, IF=1.43) N. Dadashi Serej, A. Ahmadian, S. Kasaei, S. M. SadreHoseini, “ Robust Key-point Extraction and Matching Algorithm based on Wavelet Transform and Information Theory for Point-Based Registration in Endoscopic Sinus Cavity Data”. *Springer, Signal, Image & Video Processing*, Dec. 2015.
4. (ISI, IF= 1.7)F. Nazem, A. Ahmadian, N. Dadashi Serj, M. Giti, “Two-stage point-based registration method between ultrasound and CT imaging of the liver based on ICP and unscented Kalman filter: a phantom study” *International Journal of Computer Assisted Radiology and Surgery*, vol. 9(1), pp. 39- 48, 2014.
5. (ISI, IF=1.7)M. Ershad, A. Ahmadian ,N. Dadashi Serej, H. Saberi, K. Amini, “Minimization of target registration error for vertebra in image-guided spine surgery” *International Journal of Computer Assisted Radiology and Surgery*, vol. 9(1), pp. 29- 38, 2014.
6. (ISI, IF=1.7)P. Farnia, A. Ahmadian, T. Shabanian, N. Dadashi, “Brain-shift compensation by non-rigid registration of intra-operative ultrasound images with preoperative MR images based on residual complexity”, *International Journal of Computer Assisted Radiology and Surgery*, 2015.
7. P. Farnia, A. Ahmadian, N. Dadashi, “ Performance Evaluation of the Modified Iterative Closest Point Methods for Intra-operative Ultrasound and pre-operative MR Image Registration of Brain” *journal of Frontiers in Biomedical Technologies (FBT)*, 2014.
8. N. Dadashi, A. Ahmadian, S. Kasaei, S. M. SadreHoseini, ” Feature extraction and 3D reconstruction of sinus cavityusing intraoperative videos of uncalibrated endoscopic camera”, *Signal, Image & Video Processing*, Under Review, 2016.

Conferences

9. P. Farnia, A. Ahmadian, A. Khoshnevisan, A. Jaberzadeh, N. Dadashi Serej, A. Kazerooni, "An efficient Point Based Registration of Intra-operative Ultrasound images with MR images for computation of brain shift; a Phantom Study" *Conf Proc IEEE Eng Med Biol Soc.* 2011;2011:8074-7. doi: 10.1109/IEMBS.2011.6091991.
10. Marzieh Ershad, Alireza Ahmadian, Nassim Dadashi Seraj, Hooshang Saberi, "Automatic landmark detection in spine surface CT images for registration of pre to intra-operative data" *International Conference on Electronic Health (ICEH)*, 2012

11. P. Farnia, A. Ahmadian, T. Shabaniyan, N. Dadashi Serej, J. Alirezaie, "A hybrid method for non-rigid registration of intra-operative ultrasound images with pre-operative MR images", Conf Proc IEEE Eng Med Biol Soc. 2014;2014:5562-5. doi: 10.1109/EMBC.2014.6944887.
12. Marzieh Ershad Langroodi, Alireza Ahmadian , Nassim Dadashi Seraj, Hooshang Saberi, Keyvan Amini, "Effect of Landmark Configuration on Target Registration Error for Vertebra: a phantom study" SPIE, Medical Imaging, 9 - 14 February 2013
13. F. Nazem , A. Ahmadian, N. Dadashi Serj , P.Farniaa, M. Giti, "An efficient hybrid point based registration algorithm between intra-operative ultrasound images and preoperative CT images of liver: a phantom study" SPIE Medical Imaging 2013 , 9-14 February 2013 ,USA.
14. A. Fathi Kazerooni, A. Ahmadian, N. Dadashi Serej, H. Saligheh Rad, H. Saberi, H. Yousefi, P. Farnia, "Segmentation of Brain Tumors in MRI Images Using Multi-scale Gradient Vector Flow" Conf Proc IEEE Eng Med Biol Soc. 2011;2011:7973-6. doi: 10.1109/IEMBS.2011.6091966

Academic Honors

1. Ranked First Student in Ph.D, Tehran University of Medical Sciences, Tehran, Iran, 2015.
2. Ranked First student in M.Sc., Isfahan University of Medical Sciences, Isfahan, Iran 2010.
3. Member of Talented Students, Isfahan University of Medical Sciences, Isfahan, Iran.

SKILLS

1. Languages: English, Deutch, Persian.
2. Programming: MATLAB, C++, Open CV.
3. Computer: windows os, Office.

WORKSHOPS

1. "How to write a Scientific journal Article" Springer workshop, Tehran University of Medical Sciences, 2011.

2. “Methods of Teaching”, Tehran University of Medical Sciences, 2013.

Administrative Responsibilities

1. (2011) Head of Computer software Group, Sepahan Institute of science and technology, Isfahan, Iran.
2. (2009-2011) Head of Robotics group, Sepahan Institute of science and technology, Isfahan, Iran.
3. Member of Scientific Referees of ISCEE conferences.

Teaching Experiences:

Graduate Teaching assistance

Digital Image Processing, Advanced Digital Image Processing, BSP, Pattern Recognition, Fuzzy System.

Under-graduate Teaching experiences

Lecturer of: Electrical Circuits, Computer architecture, Digital circuits, Electronics, Biomedical Instruments, Technical English Language.