Seyedalireza Khoshsirat

27 years old, single
Tehran, Iran
arkhoshsirat@gmail.com
www.khoshsirat.com

RESEARCH INTERESTS

I'm interested in combination of machine learning and image processing methods, and their application in medical image analysis.

I have experience of working with Convolutional Neural Networks, Active Shape Models, and Level-set methods.

EDUCATION

PhD	**University of Delaware** Computer Science	Jul 2018 – Present
Master's	**Allameh Tabataba'i University (Tehran)** Computer Science / Intelligent Systems, GPA: 3.7	Sep 2015 – Sep 2017
Bachelor's	**University of Applied Science and Technology (Tehran)** Computer / Software Engineering, GPA: 3.4	Jan 2012 – Feb 2014
Associate's	**Shahid Shamsipour Technical College (Tehran)** Computer / Software Engineering	Jan 2009 – Sep 2011

MASTER'S THESIS

Combined Deep-Learning and Level-set Approach to Segmentation of the Left Ventricle in 3D Cardiac MRI

Supervisor: Farzad Eskandari

Advisor: Mohammadreza Asghari Oskoei

Examiner: Seyed Ali Katanforoush (Shahid Beheshti University, Tehran)

PUBLICATIONS

Designing Evidence Based Risk Assessment System For Cancer Screening As An Applicable Approach For The Estimating Of Treatment Roadmap

Elham Maserat, Reza Safdari, Hamid Asadzadeh Aghdaei, Alireza Khoshsirat, Mohammad Reza Zali

BMJ Open, The 5th International Society for Evidence-Based Healthcare Congress, Kish Island, Iran

February 2017 - Volume 7 - Issue 1

doi: 10.1136/bmjopen-2016-015415.43

http://bmjopen.bmj.com/content/7/Suppl_1/bmjopen-2016-015415.43

PROFESSIONAL SERVICE

Software Programmer	**Mehrsys (Tehran)** Working on different software projects using up-to-date frameworks and technologies including Java (Spring, Hibernate, JasperReports), NodeJS, AngularJS, Ionic, MongoDB, SQL Server, TypeScript, Wordpress.	Sep 2014 – Aug 2018
Software Programmer	**Raydana (Tehran)** Working on an ERP system (Enterprise Resource Planning) using Java (Struts, Spring, Hibernate, JSP, JSF, GWT), Oracle, MySQL, and etc.	Jun 2011 – Sep 2014
Software Programmer	**Faranam (Tehran)** Frontend and backend software development with ASP.NET MVC, WPF, Entity Framework, SQL Server and jQuery.	Dec 2010 – Jun 2011

TECHNICAL SKILLS

Machine Learning	Convolutional Neural Networks, AutoEncoders, Principal Component Analysis
Image Processing	TensorFlow, Caffe, OpenCV, Active Shape Models, Active Appearance Models, Level-set methods
Database	Oracle, MongoDB, SQL Server, Sqlite, LevelDB, HDF5
Programming Languages	Java, Python, Matlab, NodeJS, C#, TypeScript, HTML, JavaScript, CSS
Programming Frameworks	JavaEE, Spring, Hibernate, Struts, express.js, mongoose.js, Microsoft .NET, Entity Framework
User Interface	AngularJS, Telerik, KendoUI, Bootstrap, Ionic, Apache tiles, JavaFX, ASP.NET, ASP.NET MVC, WPF
Others	Wordpress, Apache Maven, Apache Tomcat, JasperReports, Version Control Systems, gulp.js, CentOS, Photoshop

REFERENCES

Mohammadreza Asghari Oskoei	Allameh Tabataba'i University Professor of Computer Vision	oskoei@atu.ac.ir
Hossein Teymoori Faal	Allameh Tabataba'i University Professor of Mathematics and Logic	hossein.teimoori@atu.ac.ir
Mohammad Zebarjad	Mehrsys Co. Chief Executive Officer	info@mehrsys.com

APPENDIX

Master's Thesis Abstract

Segmentation of the left ventricle (LV) in cardiac magnetic resonance images (MRI) is an essential step for calculation of clinical indices such as ventricular volume and ejection fraction. In this thesis, we first explain essential concepts, then review existing methods for segmentation of LV. We continue by implementing and evaluating a method which employs deep learning algorithms combined with a level-set method to fully automatically segment the LV in short-axis cardiac MRI datasets.

The method employs deep learning algorithms to learn the segmentation task from the ground truth data. Convolutional networks are employed to automatically detect the LV chamber in MRI dataset. Stacked autoencoders are utilized to infer the shape of the LV. The inferred shape is incorporated into a level-set method to improve the accuracy and robustness of the segmentation. We validated our method using 45 cardiac MRI datasets taken from the MICCAI 2009 LV segmentation challenge and compared the results to the state-of-the-art methods. Excellent agreement with the ground truth was achieved. We computed validation metrics such as the percentage of good contours, Dice metric, average perpendicular distance, and conformity as respectively 83%, 80%, 3.4mm and 70%.

Keywords: Deep-Learning, Level-set method, Left Ventricle, Cardiac MRI, Machine Learning