Babak Samari

Room 408, McConnell Engineering Building
3480 University Street
Montreal, PQ, Canada
Postal Code: H3A 2A7

Cell Number: +1 (514) 452-7334
Email: `babak@cim.mcgill.ca`
`ll3al3ak@gmail.com`

INTERESTS	⋄ **Computer Vision, Machine Learning, Shape Analysis, AI, Medical Imaging, Software Development**

EDUCATION	**PhD. Student in Computer Science**, **McGill University**, **GPA: 4.0/4.0** Montreal, Canada. Fall 2013 - Present, Under Supervision of Prof. Kaleem Siddiqi, **Thesis:** Shape and motion analysis of 3D parallel textures and their application on the heart. Montreal, Canada. Fall 2013 - Now, **M.Sc. in Computer Engineering**, **Sharif University of Technology**, Tehran, Iran. Fall 2009 - Summer 2011, **B.Sc. in Computer Engineering**, **Isfahan University of Technology** Isfahan, Iran. Fall 2005 - Summer 2009 **Diploma in Physics and Mathematics Discipline** **Shahid Beheshti High School** Babol, Iran. Fall 2001 - Summer 2004 *Affiliated with the National Organization for the Development of Exceptional Talents (NODET)*

WORK EXPERIENCES	⋄ **Internship, Google**, May 2018 - August 2018, Waterloo, Canada. My tasks included developing software for Gmail-iOS. · **Main language(s) used: Objective-C, Java** ⋄ **Internship, Elekta Ltd.**, August 2016 - October 2016, Montreal, Canada. My tasks included conducting research and developing software for phantom generation and CT simulation, some of them are: · Working on 3D models and phantoms in NURB and Mesh format (via XCAT, Rhino, Blender, etc). · Simulating 4D phantoms with lesions and natural breathing motion. · Simulating 2D CT projections from the 4D phantoms. · Reconstructing a 3D and/or a 4D images from the CT projections. · **Main language(s) used: Python, C++** ⋄ **Internship, Rogue Research**, July 2014 - October 2014, Montreal, Canada. My tasks included conducting research and developing software for RGBD acquisition: · Processing and rendering point clouds acquired via RGBD sensors (Kinect and Carmine Primesense) via Processing Java. · Fitting mesh and registering template images to the live stream via ITK. · Working on building a new and more accurate RGBD sensor.

· **Main language(s) used: Java**

◇ **Team Manager, Researcher and Developer at Neda Rayaneh Institute**, July 2011 - August 2013, Tehran, Iran.
My tasks included managing and developing applications for iOS and researching about Mobile Technologies some of which are:

- · Working with iOS Development Kits (UIKit, MapKit, Quartz core, etc).
- · Working with mobile database (CoreData, SQLight).
- · Working with Game Development tools (Cocos2d, Box2D, Unreal Development Kit).
- · **Main language(s) used: Objective-C, C++**

◇ **Project Manager, Researcher and Developer at Rahtech Company**, January 2010 - June 2011, Tehran, Iran
My tasks included implementing, researching and managing development and maintenance of a Fleet management project. Some tasks have been listed in bellow:

- · Implementing java/web applications with ZK (an open open-source Ajax Web application framework).
- · Working with map servers.
- · Working with spatial databases (PostGIS of PostgreSQL, ORACLE, and MySQL).
- · Working with GSM modems.
- · **Main language(s) used: Java, SQL, HTML**

◇ **Developer in Basir Pardazesh**, June 2009 - December 2009, Tehran, Iran.
My tasks included implementing application for image processing and computer vision (By OpenCV).

HONORS AND AWARDS

◇ **Grad Excellence Award**, McGill University 2013–2017

◇ **Computer Science Top-up Award**, McGill University 2015

◇ **NSERC Fellowship**, McGill University 2013–2018

◇ Ranked **19th** among more than 20,000 in the **National University Entrance Exam (PhD)**

◇ Ranked **104th** among more than 30,000 in the **National University Entrance Exam (MS)**

◇ Semifinalist for the **National Informatics Olympiad**, 2002

◇ Semifinalist for the **National Informatics Olympiad**, 2003

PUBLICATION

◇ **Local Spectral Graph Convolution for Point Set Feature Learning**
(joint work with Chu Wang and Kaleem Siddiqi)
in *European Conference on Computer Vision (ECCV 2018).*

◇ **Estimating Sheets in the Heart Wall**
(joint work with Tabish Seyed and Kaleem Siddiqi)
in *Statistical Atlases and Computational Modelling of the Heart (STACOM 2018).*

◇ **Denoising Moving Heart Wall Fibers Using Cartan Frames**
(joint work with Tristan Aumentado-Armstrong, Gustav Strijkers, Martijn Froeling, and Kaleem Siddiqi)
in *The Medical Image Computing and Computer Assisted Intervention Society (MICCAI 2017).*

◇ **Cartan Frames for Heart Wall Fiber Motion**
(joint work with Tristan Aumentado-Armstrong, Gustav Strijkers, Martijn Froeling, and Kaleem Siddiqi)
in *Functional Imaging and Modelling of the Heart (FIMH 2017).*

◇ **Robust Environment Mapping Using Flux Skeletons**
(joint work with M. Rezanejad, G. Dudek, K. Siddiqi, I. Rekleitis)
in *International Conference on Intelligent Robots and Systems (IROS 2015).*

⋄ **Scalar Prefix Search: A New Route Lookup Algorithm for Next Generation Internet**
(joint work with Mohammad Behdadfar, Hossein Saidi, Hamid Alaei)
in *International Conference on Computer Communications, Joint Conference of the IEEE Computer and Communications Societies (INFOCOM 2009) 2509-2517.*

TEACHING EXPERI-ENCES

⋄ **Teaching Assistant; Computer Vision (COMP-558), McGill University**, Fall 2017

⋄ **Teaching Assistant; Computers in Engineering-C++ (COMP-208), McGill University**, Fall 2013, Winter 2014, Fall 2014, Winter 2015, Fall 2015, Winter 2016, Fall 2017

⋄ **Teaching Assistant; Foundations of Computing-Java (COMP-202), McGill University**, Winter 2017

⋄ **Teaching Topics in iOS programming workshop, Sharif University and Rubaco Institute**, Summer 2013

⋄ **Teaching Topics in Computer Engineering to Applicants of National Entrance University Exam, Pardazesh Institute**, Summer 2010

PRACTICAL SKILLS

⋄ **Programming Languages**: JAVA, C, C++, Objective C, Swift, HTML, SQL, Python, Assembly

⋄ **Operating Systems**: Linux, Mac OSX, iOS, Free BSD Windows(Desktop and Mobile), Unix, and proficient in Kernel Programming

⋄ **DataBases**: ORACLE, PostgreSQL, PostGIS, MySQL, Hibernate, xCoreData, SQLite, Microsoft SQLServer

⋄ **Network and GSM**: Network Protocols, Connection Protocols, AT Commands.

⋄ **Softwares and IDEs**: eclipse, XCode, Visual Studio, MATLAB

⋄ **Typesetting**: TEX, LATEX, Microsoft Word

OTHER SIDE

⋄ **Music**: I am a professional Persian **Santoor** player. Santoor and Persian classical music have always been an important part of my life during the past 20 years.