

# Mostafa S. IBRAHIM

## PERSONAL DATA

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ADDRESS	British Columbia, Canada
PHONE	+1 604 401 0810
EMAIL	<a href="mailto:mostafa.saad.fci@gmail.com">mostafa.saad.fci@gmail.com</a> (Primary)   <a href="mailto:msibrahi@sfu.ca">msibrahi@sfu.ca</a>
LINKS	<a href="#">Website</a>   <a href="#">LinkedIn</a>   <a href="#">Github</a>   <a href="#">Google Scholar</a>   <a href="#">Ask</a>   <a href="#">YouTube</a>

## INTERESTS

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I have a mix of experience in Software Engineering, 2D Computer Vision Research and Algorithms Design. My interests are to apply Computer vision & Machine Learning to solve real-world problems in roles that preferably involve leadership (so far have two short industrial leadership roles and volunteer supervision activity).

## SKILLS

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COMPUTER VISION R&D	8 years in Deep Learning, Action Recognition, Human Group Activities, Classification, Object Detection, Semantic Segmentation, Human/Hand Pose Estimation, Gaze Estimation, Object Tracking, GANs, Domain Adaptation
SOFTWARE ENGINEERING	5 years in Payment(Java EE), Storage Management (C++)
ALGORITHMIC SKILLS	5 years (competitions): ICPC World Finalist, Trainer, Chief Judge, Coach
PROGRAMMING LANGUAGES	Python, C++, Java, Matlab
FRAMEWORKS	TensorFlow, Caffe, Lasagne, OpenCV, LibSVM, Java EE frameworks

## EDUCATION

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2015-2018	<b>Ph.D. in COMPUTER SCIENCE, Simon Fraser University, Canada</b> SUPERVISOR Prof <a href="#">Greg Mori</a> - <b>Computer Vision</b> Field Worked in Multi-person Activity Understanding - GPA: 3.92/4 Publications in CVPR, ECCV, and others 2 Internships: Vision Engineering (Google) & Vision Research (D-wave) Keywords: Deep learning, C++, Caffe, Python, Lasagne, Tensorflow, Temporal Models
2010-2012	<b>M.Sc. in COMPUTER SCIENCE, Cairo University, Egypt</b> SUPERVISOR: Prof <a href="#">Amr Badr</a> , <b>Computer Vision</b> Field Worked in Image Object Detection: Object Proposals Approach
2004-2008	<b>Hon. B.Sc. in COMPUTER SCIENCE, Cairo University, Egypt</b> GPA: 3.83/4 (3rd on class) Graduation Project: Programming Online Judge, <i>Using Java, JSF Framework</i> Internship: IBM Egypt, Summer 2007 in Employees Evaluation System

## WORK EXPERIENCE

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Mar 2019-Present	<b>Computer Vision Researcher at HUAWEI, Canada</b> Working on interesting computer vision and machine learning R&D challenges. Mentoring interns. Keywords: Tensorflow, PyTorch, Hand Pose Estimation, Domain Adaptation, Traffic Control Gesture Recognition
Nov 2018-Mar 2019	<b>Computer Vision Researcher   Team Lead at FLEX A.I., Canada</b> Fitness application: built in a short time a challenging computer vision feature My Team: Me (lead) and a Machine Learning Engineer Proposed a problem reformulation, practical annotations process and processing pipeline Implemented the pipeline and made ready for back-end integration. Keywords: Python, Tensorflow, Human Pose Estimation, Video Classification, AWS
Mar 2018-Oct 2018	<b>Computer Vision Research Intern at D-WAVE, Canada</b> Worked in Semi-supervised Semantic Segmentation Project - Paper accepted @CVPR Keywords: Python, Tensorflow, Semantic Segmentation, PASCAL VOC SUPERVISOR <a href="#">Arash Vahdat</a>
May 2016-Aug 2016	<b>Java Software Engineer Intern at GOOGLE, USA</b> Worked in the <b>photos team</b> : investigating a feature for the photos app Designed, developed and tested the feature internally My Evaluation was very positive: <b>very productive and needed minimal supervision</b> Google offered another internship without interviewing process TEAM LEAD <a href="#">Jingyu Cui</a>
Aug 2014-Apr 2016	<b>C++ Senior Computer Vision Engineer at HERUOLABS, Germany</b> Worked remotely from Egypt: full time for 5 months, then 40% part time during PhD Developed <b>vision modules</b> in detection, object proposals and tracking Developed tools to facilitate complex models training Developed a gateway to receive vision queries and process them Lead small research to work on some unsupervised learning problems Keywords: C++, Opencv, Caffe, CGI, Apache, AWS
Jul 2011-Jul 2014	<b>C++ Software Engineer at NTP, USA</b> Worked remotely from Egypt in a <b>data storage management</b> software named <a href="#">NTP QFS</a> Team was maintaining Disk Quota Policies to limit user consumption Customizing the policies to meet the specific needs of your individual users Managing file data use across: the enterprise, multiple platforms, storage types
Jun 2010-Mar 2011	<b>Research Assistant at MICROSOFT, Egypt</b> Computer Vision Field - Semantic Image Segmentation problem Contribution: Potential values in a discrete energy minimization setup Supervisor: Prof <a href="#">Dr Motaz El Saban</a> . Programming Languages: C++, Matlab
Nov 2008-May 2010	<b>Java Software Engineer at FAWRY, Egypt</b> Team was building a bill presentment and payment network to handle the bills through the various electronic channels available at <b>banks</b> ; including ATMs, the internet, mobile phones and point of sales. Technology: Java EE(JSF web, JPA, Web services, JMS)

## RESEARCH PUBLICATIONS

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- **Mostafa S. Ibrahim**, Arash Vahdat, Mani Ranjbar, William G. Macready. Semi-Supervised Semantic Image Segmentation with Self-correcting Networks, [in CVPR 2020](#)
- **Mostafa S. Ibrahim**, Greg Mori. Hierarchical Relational Networks for Group Activity Recognition and Retrieval, in ECCV 2018. [Github](#)
- Jiawei He, Zhiwei Deng, **Mostafa S. Ibrahim**, Greg Mori. Generic Tubelet Proposals for Action Localization, in [WACV 2018](#)
- Mehran Khodabandeh, Zhiwei Deng, **Mostafa S. Ibrahim**, Shinichi Satoh, Greg Mori. Active Learning for Structured Prediction from Partially Labeled Data, in [arXiv](#), 2017
- **Mostafa S. Ibrahim**, Srikanth Muralidharan, Zhiwei Deng, Arash Vahdat, Greg Mori. A Hierarchical Deep Temporal Model for Group Activity Recognition, in [CVPR 2016](#). [Github](#)
- **Mostafa S. Ibrahim**, Amr A. Badr, Mostafa R. Abdallah and Ibrahim F. Eissa. Bounding Box Object Localization Based On Image Superpixelization, in [Procedia CS 2012](#)
- **Mostafa S. Ibrahim** and Motaz A. El Saban. Higher order potentials with superpixel neighbourhood (hsn) for semantic image segmentation, in [ICIP 2011](#)

## PROGRAMMING CONTESTS ACTIVITY

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- Part of SFU ACM ICPC Administration team/WPC in 2017 & 2018.
- [Active International Coach](#) with 30+ trainees yearly from several nationalities.
- Judge & Problem Setter in Arabian Regional ACM ICPC 2013.
- Chief Judge in Egyptian & Jordanian National ACM ICPC in 2012.
- 2011 ACM ICPC World Finalist in Orlando, Florida - USA.
- 2nd rank 2009 and 2nd rank 2010 in Arab Collegiate Programming Contest.
- 2nd rank 2006, 5th rank 2008 and 1st rank 2009 in Egyptian National ACM ICPC.
- 8th rank in 2005 Egypt Olympiad in Informatics (EOI), Silver Medal.
- Have a [YouTube Channel](#) (250+ videos - 33k subscribers).
- Designed a popular [Training sheet](#) for new trainees.

## OTHERS

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- Teaching Assistant (2008-2014), Cairo University. Courses: Programming, Software Engineering, Data Structures and Algorithms, Neural Network, Genetic Programming.
- Author for 2 programming courses @Udemy (Mastering Critical skills series)
- Conducted Computer Vision Study Group in Cairo University in 2012-2013 & in SFU 2016.
- Organized Arabic Computer Vision [Webinar Series](#).
- Co-organized Machine Learning Day in Cairo University in 2011.
- Active volunteer on Ask.fm for Helping students (Answered 63K questions).
- Much fun: Gym, Football, Organizing BBQs & social gathering.