

Mostafa S. IBRAHIM

PERSONAL DATA

ADDRESS	Santa Clara, California, US
PHONE	+1 408 640 9914
EMAIL	mostafa.saad.fci@gmail.com (Primary) msibrahi@sfu.ca
LINKS	Website Linkedin Github Google Scholar Ask YouTube

INTERESTS

I have a mix of experience in Software Engineering, Computer Vision and Algorithms Design. My interests are to apply Computer vision & Machine Learning to solve real-world problems.

SKILLS

COMPUTER VISION R&D	11 years in Deep Learning, Action Recognition, Human Group Activities, Classification, Object Detection, Semantic Segmentation, Human/Hand Pose Estimation, Object Tracking, GAN, Domain Adaptation, Graph Convolutional Network, LSTM, Automotive Industry
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	Pytorh, TensorFlow, Caffe, Lasnge, OpenCV, LibSVM, Java EE frameworks

EDUCATION

2015-2018	Ph.D. in COMPUTER SCIENCE, Simon Fraser University, Canada SUPERVISOR Prof Greg Mori - Computer Vision Field Worked in Multi-person Activity Understanding - GPA: 3.92/4 First author in 3 top-tier Publications (2 CVPR, 1 ECCV) + others - 700+ citations 2 Internships: Vision Engineering (Google) & Vision Research (D-wave) Keywords: Deep learning, C++, Caffe, Python, Lasagne, Tensorflow, Temporal Models, Graph Convolutional Networks, Noise Treatment
2010-2012	M.Sc. in COMPUTER SCIENCE, Cairo University, Egypt SUPERVISOR: Prof Amr Badr , Computer Vision Field Worked in Image Object Detection: Object Proposals Approach
2004-2008	Hon. B.Sc. in COMPUTER SCIENCE, Cairo University, Egypt 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

ML WORK EXPERIENCE

Dec 2022-Present	<p>Senior Computer Vision Engineer NVIDIA, US</p> <p>Part of NVIDIA DRIVE IX teams: in-cabin computer vision features</p> <p>Expected Responsibilities</p> <ul style="list-style-type: none">- End-to-End feature(s) ownership- Lead/mentor subset of features- Cross-team communications
Mar 2019-Dec 2022	<p>Senior Vision Applied Scientist Team Lead at HUAWEI, Canada</p> <p>Leading a small team</p> <p>Hand-pose estimation project:</p> <ul style="list-style-type: none">- Proposed several GAN frameworks for adding realism for Hand Synthetic Data- Domain Adaptation for joint training of Real and Synthetic Data- 3D Absolute Pose Estimation (Minor experience) <p>Autonomous Driving projects:</p> <ul style="list-style-type: none">- Police Officer Traffic Control- 3D Object Detection from Lidar Multisensor Fusion- Model Quantization for 3D Object Detection <p>Keywords: Tensorflow, PyTorch, Pose Estimation, Domain Adaptation, GAN, Temporal Models, Autonomous Driving, Gesture Recognition, 3D Detection Lidar</p>
Nov 2018-Mar 2019	<p>Computer Vision Applied Scientist Team Lead at FLEX A.I., Canada</p> <p>Leading a small team</p> <p>Fitness application: built in a short time a challenging computer vision feature</p> <p>Proposed a problem reformulation, practical annotations process and processing pipeline</p> <p>Implemented the pipeline and made ready for back-end integration.</p> <p>Keywords: Python, Tensorflow, Human Pose Estimation, Video Classification, AWS</p>
Mar 2018-Oct 2018	<p>Computer Vision Research Intern at D-WAVE, Canada</p> <p>Worked in Semi-supervised Semantic Segmentation Project - Paper accepted @CVPR</p> <p>Keywords: Python, Tensorflow, Semantic Segmentation, PASCAL VOC</p> <p>SUPERVISOR Arash Vahdat</p>
May 2016-Aug 2016	<p>Java Software Engineer Intern at GOOGLE, USA</p> <p>Worked in the photos team: investigating a feature for the photos app</p> <p>Designed, developed and tested the feature internally</p> <p>My Evaluation was very positive: very productive and needed minimal supervision</p> <p>Google offered another internship without interviewing process</p> <p>TEAM LEAD Jingyu Cui</p>
Aug 2014-Apr 2016	<p>C++ Senior Computer Vision Engineer at HERUOLABS, Germany</p> <p>Worked remotely from Egypt: full time for 5 months, then 40% part time during PhD</p> <p>Developed vision modules in detection, object proposals and tracking</p> <p>Developed tools to facilitate complex models training</p> <p>Developed a gateway to receive vision queries and process them</p> <p>Lead small research to work on some unsupervised learning problems</p> <p>Keywords: C++, Opencv, Caffe, CGI, Apache, AWS</p>
Jun 2010-Mar 2011	<p>Research Assistant at MICROSOFT, Egypt</p> <p>Computer Vision Field - Semantic Image Segmentation problem</p> <p>Contribution: Potential values in a discrete energy minimization setup: Paper in ICIP2011</p> <p>Supervisor: Prof Dr Motaz El Saban. Programming Languages: C++, Matlab</p>

SWE WORK EXPERIENCE

Jul 2011-Jul 2014	C++ Software Engineer at CRITICALSITES, USA Worked remotely from Egypt in a data storage management software named NTP QFS 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
Nov 2008-May 2010	Java Software Engineer at FAWRY, Egypt Team was building a bill presentment and payment network to handle the bills through the various electronic channels available at banks ; including ATMs, the internet, mobile phones and point of sales. Technology: Java EE(JSF web, JPA, Web services, JMS)

RESEARCH PUBLICATIONS ([524 CITATIONS](#))

- **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

- Part of SFU ACM ICPC Administration team/WPC in 2017 & 2018.
- [Supervised](#) 200+ trainees 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 - 90k subscribers).
- Designed a popular [Training sheet](#) for new trainees.
- Designed senior roadmaps for ICPC and IOI [Training sheet](#).

OTHERS

- Teaching Assistant (2008-2014), Cairo University. Courses: Programming, Software Engineering, Data Structures and Algorithms, Neural Network, Genetic Programming.
- 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 75K questions).
- Much fun: Gym, Football, Organizing BBQs & social gathering.