Adel Bibi

Curriculum Vitae

Education

2016–present	**PhD, Electrical Engineering**, *KAUST*, Thuwal, Kingdom of Saudi Arabia.
Advisor:	Professor Bernard Ghanem
2014–2015	**MSc, Electrical Engineering**, *KAUST*, Thuwal, Kingdom of Saudi Arabia.
Advisor:	Professor Bernard Ghanem
Thesis:	Advances in RGB and RGBD Generic Object Trackers
GPA:	4.0/4.0
2010–2014	**BSc, Electrical Engineering**, *Kuwait University*, Kuwait.
GPA:	3.99/4.0 (EE major: 3.99/4.0)

Master Thesis

Title	"*Advances in RGB and RGBD Generic Object Trackers*"
Advisor	Professor Bernard Ghanem
Thesis Comitte:	Professor Wolfgang Heidrich
	Professor Tareq Al-Naffouri
Abstract	Visual object tracking is a classical and very popular problem in computer vision with a plethora of applications such as vehicle navigation, human computer interface, human motion analysis, surveillance, auto-control systems and many more. Given the initial state of a target in the first frame, the goal of tracking is to predict states of the target over time where the states describe a bounding box covering the target. Despite numerous object tracking methods that have been proposed in recent years, most of these trackers suffer a degradation in performance mainly because of several challenges that include illumination changes, motion blur, complex motion, out of plane rotation, and partial or full occlusion, while occlusion is usually the most contributing factor in degrading the majority of trackers, if not all of them. This thesis is devoted to the advancement of generic object trackers tackling different challenges through different proposed methods. The work presented propose four new state-of-the-art trackers. One of which is 3D based tracker in a particle filter framework where both synchronization and registration of RGB and depth streams are adjusted automatically, and three works in correlation filters that achieve state-of-the-art performance in terms of accuracy while maintaining reasonable speeds.

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Awards

Feb 2018	Awarded the best poster prize for the Optimization and Big Data Conference oraganized by Prof Peter Richtarik in KAUST for our work on Tensor Convolutional Sparse Coding.
July 2017	Selected to attend the Internation Computer Vision Summer School (ICVSS17) where I presented our our on large sclae LASSOs.
May 2016	My graduation project (SAIC) was nominated to the top 5 projects to present Kuwait University in a regional competition.
December 2015	Ranked first among my graduating class (MSc) with a GPA of 4.0/4.0.
November 2014	Award for participating in Falling Walls Lab competition in KAUST.
June 2014	MSc/PhD scholarship at King Abdullah University of Science and Technology (KAUST Fellowship).
May 2014	Award from Kuwait Foundation for the Advancement of Sciences for my graduation project (SAIC).
May 2014	Best graduation project in Electrical Engineering for the year (SAIC).
2010–2014	Earned Dean's Honor List award for four consecutive years as an undergraduate.
2014	Ranked first among my graduating class (BSc) with a GPA of 3.99/4.
November 2013	Chosen among 200 students to present Kuwait University in the 7th IEEE GCC Conference in Doha, Qatar.
October 2011	Award for taking 4th place in the 1st National Robotics Competition of Kuwait Colleges and Universities.
September 2010	Attained academic scholarship from the minster of higher education for my undergraduate studies at Kuwait University.
September 2010	Ranked 31st in all Kuwait in high-school final examinations among around 15K.

Talks

Feb 2018	I gave a talk on our Tensor reformulation for Convolutional Sparse Coding at the Optimization and Big Data Conference in KAUST.
July 2017	I gave an oral talk in CVPR17 about our work on solving large scale LASSOs in the Fourier Domain.
Oct 2016	I gave a talk in ECCV16 about our new recent proposed framework towards improving all correlation based trackers.

Teaching Experience

Spring 2018	Teaching Assistant AMCS211: Numerical Optimization, KAUST.
Spring 2016	Teaching Assistant AMCS211: Numerical Optimization, KAUST.
Instructor:	Professor Bernard Ghanem, KAUST.

Spring 2016	Invited for a lecture on Numerical Optimization, KAUST.
Fall 2015	Teaching Assistant EE397: Advanced Topics in Signal Processing (Inroduction to Computer Vision), KAUST.
Instructor:	Professor Bernard Ghanem, KAUST.

Course Work

Fall 2014	Introduction to Computer Vision, KAUST.
Fall 2014	Probability and Random Processes, KAUST.
Fall 2014	Digital Signal Processing, KAUST.
Spring 2015	Numerical Optimization, KAUST.
Spring 2015	Complex Analysis, KAUST.
Fall 2017	Large Scale Stochastic Optimization, KAUST.
Spring 2018	Contemporary Topics in Machine Learning, KAUST.

Languages

Arabic	**Native**
English	**Professional working proficiency**

Skills

Programming Languages	MATLAB, Julia, C++(basic), Python(basic), AT, LaTeX, C(Arduino IDE), Assembly
Hardware	Arduino, PIC, Atmega320P, Raspberry Pi, Intel P8051

Publications

Conference Publications

- Adel Bibi, Modar Alfadly and Bernard Ghanem, "Analytic Expressions for Probabilistic Moments of PL-DNN with Gaussian Input", Computer Vision and Pattern Recognition (CVPR 2018)[Oral], Salt Lake City, USA.

- Adel Bibi, Baoyuan Wu and Bernard Ghanem, "Constrained K-means with General Pairwise and Cardinality Constraints", arXiv.

- Adel Bibi and Bernard Ghanem, "High Order Tensor Formulation for Convolutional Sparse Coding", International Conference on Computer Vision (ICCV 2017), Venice, Italy.

- Adel Bibi, Hani Itani and Bernard Ghanem, "FFTLasso: Large-Scale LASSO in the Fourier Domain", Computer Vision and Pattern Recognition (CVPR 2017) [Oral], Amsterdam, Netherlands.

- Adel Bibi, Matthias Mueller and Bernard Ghanem, "Target Response Adaptation for Correlation Filter Tracking", European Conference in Computer Vision (ECCV 2016) [Spotlight], Amsterdam, Netherlands.

- <u>Adel Bibi</u>, Tianzhu Zhang and Bernard Ghanem, "3D Part-Based Sparse Tracker with Automatic Synchronization and Registration", Computer Vision and Pattern Recognition (CVPR 2016), Las Vegas, USA.
- Tianzhu Zhang, <u>Adel Bibi</u> and Bernard Ghanem, "In Defense of Sparse Tracking: Circulant Sparse Tracker", Computer Vision and Pattern Recognition (CVPR 2016) [Spotlight], Las Vegas, USA.
- <u>Adel Bibi</u> and Bernard Ghanem, "Multi-Template Scale Adaptive Kernelized Correlation Filters", International Conference on Computer Vision Workshop (ICCVW/VOT 2015), Santiago, Chile.
- Matej Kristan, Jiři Matas, Aleš Leonardis, Michael Felsberg, <u>Adel Bibi</u>, et al., "The Visual Object Tracking VOT2015 challenge results ", International Conference on Computer Vision Workshop (ICCVW/VOT 2015), Santiago, Chile.

Master's Thesis

- <u>Adel Bibi</u>, "Advances in RGBD and RGBD Generic Object Trackers", Masters Thesis, Electrical Engineering Department, King Abdullah University of Science and Technology.

References

- Two references available upon request.

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