Noureldien Hussein

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Summary

Immediately available for applied research in computer vision. PhD in computer vision from the University of Amsterdam. I have the scientific and engineering skills to solve problems using the toolbox of computer vision and machine learning.

Education

2016 - 2020 **PhD Computer Vision** - University of Amsterdam - Netherlands
Action Recognition • Temporal Modeling • Video Description • Generative Models • Face Manipulation
Graph Representation • Multi-modal Learning • Efficient Networks • Zero-shot Learning • Self-supervision
Advisors: Arnold Smeulders, Efstratios Gavves

2014 - 2015 **MSc Artificial Intelligence** - University of Southampton - UK
Computer Vision • Machine Learning • Intelligent Agents • Computational Finance
Thesis: End-to-end Hierarchical CNN for Large-Scale Traffic Sign Detection and Recognition

2005 - 2012 **BSc Computer and System Engineering** - Ain Shams University - Egypt
Software Engineering • Neural Networks • Operating Systems • Computer Networks
Data Structures and Algorithms • Computer Security • Computer Architecture
Thesis: Arabic Sign Language Recognition in Real Time (Distinction, Award-winning)

Professional Experience

01 - 04.2021 **Incoming Research Intern, Computer Vision** - Facebook AI - USA
Work with Lorenzo Torresani on video analysis and understanding
Focus on video representation learning of long-range human activities in videos

02 - 07.2020 **Research Intern, Computer Vision** - Microsoft - USA
Conduct research on understanding facial expressions in video streams
Expected outcomes: scientific publication and tangible product prototype

2016 - 2020 **Graduate Research Assistant** - University of Amsterdam - Netherlands
Conduct world-class research published in top conferences and journals
Co-supervise MSc/BSc thesis projects, and assist in teaching BSc subjects
Reviewer for conferences and journals: CVPR, ICCV, ECCV, TPAMI, IEEE-ToM, ACM-MM
Helped in organizing academic conferences: ECCV16, ACM-MM16, ICCV HVU

06 - 10.2019 **Research Intern, Computer Vision** - Qualcomm - Netherlands
Research on efficient recognition of long-range actions in videos
Outcome is concluded and is under submission

05.13 - 05.14 **Software Developer** - Breeze IT - UK
Designed/developed web and mobile solutions using C#, ASP.Net, MVC, Xamarin
Developed educational, augmented reality app for iPad using C#, Unity3D

11.12 - 04.13 **Software Development Engineer** - ITWorx - Egypt
Saved 60% of server monitoring time by developing automated-monitoring tool
Proof of concept and investigation for integrating different technologies

Publications

Conferences and Workshops

2020 Self-Selective Context for Interaction Recognition - *ICPR*
M. Kilickaya, N. Hussein, E. Gavves and A.W.M. Smeulders

2019 VideoGraph: Recognizing Minutes-Long Human Activities in Videos - *ICCV Workshop*
N. Hussein, E. Gavves and A.W.M. Smeulders

2019 Timeception for Complex Action Recognition - *CVPR* - Oral Presentation
N. Hussein, E. Gavves and A.W.M. Smeulders

2017 Unified Embedding and Metric Learning for Zero-Exemplar Event Detection - *CVPR*
N. Hussein, E. Gavves and A.W.M. Smeulders

2016 Searching Videos, Detecting Events and Describing Videos - *TRECVID Workshop*
C. Snoek, J. Dong, X. Li, X. Wang, Q. Wei, W. Lan E. Gavves, N. Hussein, D.C. Koelma and A. Smeulders

Under Review

2020 Conditional Gating of Segments in Long-range Activities
N. Hussein, E. Gavves and A.W.M. Smeulders

2020 Permutation Invariant Convolution for Recognizing Long-range Activities
N. Hussein, E. Gavves and A.W.M. Smeulders

Teaching Experience

Thesis Supervision

2019 Temporal Localization of Actions in Untrimmed Videos, Juan Buhagiar - *MSc AI*
2018 Improving Word Embeddings for Zero-Shot Event Localisation, Joop Pascha - *MSc AI*
2017 Real-Time Composing of Restaurant Label Classifiers Using Word Similarity, Tony Nguyen - *BSc AI*

Teaching Assistance

2018 Autonomous Mobile Robots - BSc Artificial Intelligence
2017 Information Visualization - BSc Computer Science
2016 Autonomous Mobile Robots - BSc Computer Science, BSc Artificial Intelligence

Invited Talks

01.2021 Timeception for Complex Action Recognition – GDR-ISIS (Online, Covid-19)
03.2020 Trends in Recognizing Complex Human Activities in Videos – University of Central Florida (Online, Covid-19)
01.2020 Permutation Invariant Convolution for Recognizing Long-range Activities – Qualcomm AI Research
10.2019 VideoEpitoma: Efficient Recognition of Long-range Actions – Qualcomm AI Research
10.2019 Recent Advances in Understanding Long-range and Complex Actions – University of Amsterdam
05.2019 VideoGraph: Recognizing Minutes-long Human Activities – Qualcomm AI Research
03.2019 Trends in Action Recognition – Guest Lecturer, University of Amsterdam
10.2018 Timeception: Going Deeper with Temporal Convolutions – Qualcomm AI Research
03.2018 Decoupled Spatio-Temporal Convolutions for Recognizing Actions in Long Videos – Qualcomm AI Research
02.2017 Unified Embedding and Metric Learning for Zero-exemplar Event Detection – Qualcomm AI Research
04.2016 The Story of This: Object-Instance Driven Video Description – Qualcomm AI Research
12.2012 The Road to Start-up Your Idea – Social Innovation Summit, US
10.2012 Winning the First Place in Microsoft Imagine Cup – Microsoft Middle East Annual Meeting, Turkey

Patents

2020 Permutation Invariant Convolution (PIC) For Recognizing Long-range Activities, Qualcomm Ref. 200247GR1
2020 Context-driven Learning of Human-object Interactions, Qualcomm Ref. 200249GR1
2020 Recognizing Minutes-Long Human Activities in Videos, US20200302185A1
2017 Unified Embedding and Metric Learning for Zero-Exemplar Event Detection, US20180137360A1

Grants

2012 $50k angel funding from Microsoft to start-up our heath-care platform HealthBuzz - USA

Awards

2016 3rd place in TRECVID Multimedia Event Detection (MED) Challenge - Online
2015 1st place in Kaggle in-class competition for recommender systems - Online
2012 3rd place in Microsoft Imagine Cup Grant competition - USA
2012 1st place worldwide, Windows Phone Challenge, Microsoft Imagine Cup, $8k prize - Australia
2010 1st place in Software Design, Imagine Cup Egypt, competed in the world finals - Poland

Technical Skills

Platforms (*proficient*): PyTorch, TensorFlow, Keras, Caffe2, (*familiar*): Gensim, NLTK, MXNet, CNTK
Scientific (*proficient*): OpenCV, Scikit-Image, Pillow, PyLearn, Scikit-Learn, SciPy, Pandas, Numpy
Languages (*proficient*): Python, C#, Matlab, HTML/CSS, JavaScript, (*familiar*): Java, SQL, C/C++
Coding object-oriented, web, mobile, database, algorithms, data structures, version control

Languages

English Full professional proficiency, TOEFL: 109/120, 07.2015
Arabic Native

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