

PhD in computer vision from the University of Amsterdam. Experienced in video and image understanding. Industrial internships at Microsoft and Qualcomm. I can help your team solve the toughest problems using computer vision.

Experience

- 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
- 06 - 10.2019 Research Intern, Computer Vision - **Qualcomm** - Netherlands
Conduct research on efficient recognition of long-range actions in videos
Outcome is concluded and is under submission
- 05.14 - 05.15 Software Engineer - **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
- 02 - 07.2020 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

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)

Publications

- 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
- 2020 Permutation Invariant Convolution for Recognizing Long-range Activities

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

Achievements

- Patents** Permutation Invariant Convolution (PIC) For Recognizing Long-range Activities, Qualcomm Ref. 200247GR1
Context-driven Learning of Human-object Interactions, Qualcomm Ref. 200249GR1
Recognizing Minutes-Long Human Activities in Videos, US 20200302185A1
Unified Embedding and Metric Learning for Zero-Exemplar Event Detection, US 20180137360A1
- Grants** \$50k angel funding from Microsoft to start-up our health-care platform HealthBuzz, 2012 - USA
- Awards** 1st place in Kaggle in-class competition for recommender systems, 2015
3rd place in Microsoft Imagine Cup Grant competition, 2012 - USA
1st place worldwide, Windows Phone Challenge, Microsoft Imagine Cup, \$8k prize, 2012 - Australia
1st place in Software Design, Imagine Cup Egypt, competed in the world finals, 2010 - Poland 09 Dec 2020