AMIRHOSEIN TOOSI

Computer Vision/Deep Learning Eng.

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About me

Computer Vision & Deep learning specialist at Abinsula s.r.l. Working on Embedded Deep Learning-based Computer Vision solutions. Former post-doc researcher at Computer Graphics and Vision Group, department of Computer and Control Engineering (DAUIN) Polytechnic University of Turin. Worked on Deep Learning based multi-view 3D human pose estimation and tracking for sport events. He received his PhD in Computer and Control Engineering from Polytechnic University of Turin, and his Master's in Mechatronics Engineering from Qazvin Azad University. He worked on software-based Biometrics liveness detection systems as for his PhD's research project. For his Master's thesis project he developed a Haptic VR Simulator for root canal treatments training. Previously, he received his B.s. in Computer Software Eng. from Tehran Azad University.
Skills including:

- Machine Learning, Deep Learning, Computer Vision, Image processing, etc.

- Physics-based Haptic VR Simulators for surgical procedures training.

- Robotics Programming (ROS framework)

- Strong background in developing multi-disciplinary engineering software solutions.

Skills

- Python
- Caffe/Tensorflow/Keras/PyTorch
- OpenCV
- Matlab scripting language
- OpenGL/OpenHaptics/WebGL/js
- C/C++
- ROS
- LaTeX

Education

2017-19 — *Post-doc. Computer and Control Engineering* — *Turin, Italy*
Politecnico di Torino

2014-17 — *Ph.D. Computer and Control Engineering* — *Turin, Italy*
Politecnico di Torino

2010-13 — *M.Sc. Mechatronics Engineering* — *Qazvin, Iran*
Qazvin Azad University (QIAU)

2003-08 — *B.Sc. Computer Software Engineering* — *Tehran, Iran*
Tehran Azad University

Experience

since 2019 — *Computer Vision & Deep learning specialist* — *Abinsula s.r.l*
- *VIGNAL project: Pedestrian detection and collision avoidance for forklifts.*
- *EasyRain project: On-board Driver Distraction Inhibitor system.*
- *Topcon/WEEO project: Agriculture vehicles monitoring smartphone app.*

2017-19 — *Postdoc Researcher* — *Politecnico di Torino*
- *Multi-view 3D human pose estimation and tracking in sports events*

2014-17 — *PhD Candidate / Researcher* — *Politecnico di Torino*
- *Feature Fusion for biometrics spoof detection*

2011-14 — *Robotic systems software developer* — *AFACO Group*
- *CCTV Sewer Inspection Robotic Systems Software developer.*

2013-14 — *Research assistant* — *Shahid Rajaee University*
- *Haptic VR simulation of surgical stitching of soft tissue.*
- *Haptic VR simulation of Cataract surgery.*

2012-13 — *Researcher/Software Developer* — *Mechatronics Research Laboratory*
- *Member of Service Robots team (@home league).*
- *Object Detection, grasping and Trajectory planning for 6-DOF robotic arm.*

2012-13 — *Robotics coach/supervisor* — *Tehran Municipality*
- *Head of Tehran Municipality Robotics Association.*
- *Coach and mentor of student robotics teams.*
- *Award Winner of several domestic and international robotics competitions.*

Publications

2018 — A. Toosi, A. Bottino, S. Cumani, "Assessing Transfer Learning on Convolutional Neural Networks for patch–based Fingerprint Liveness Detection", *Studies in Computational Intelligence, Springer.*

2017 — A. Toosi, A. Bottino, S. Cumani, "Convolutional Neural Network Patch-based Voting for Fingerprint Liveness Detection", *9th International Joint Conference on Computational Intelligence.*

2017 — A. Toosi, A. Bottino, S. Cumani, P. Negri, P. Sottile, "Feature Fusion for Fingerprint Liveness Detection: a Comparative Study", *IEEE Access.*

2016 — A. Bottino, A. Martina, F, Strada, A. Toosi, "GAINE - A Portable Framework for the Development of Edutainment Applications Based on Multitouch and Tangible Interaction", *Journal of Entertainment Computing, Elsevier.*

2015 — A. Toosi, S. Cumani, A. Bottino, "On Multiview Analysis of Fingerprint Images for the Development of Spoofing Detection Methods" , *14th Iberoamerican Congress on Pattern Recognition.*

2015 — A. Bottino, A. Martina, A. Toosi, "GAINE - tanGible Augmented INteraction for Edutatement", *INTETAIN 2015.*

2014 — A. Toosi, M. Arbabtafti, B. Richardson, "Virtual Reality Haptic Simulation of Root Canal Therapy", *Journal of Applied Mechanics and Materials.*