Heraklion, Crete, Greece
Open to relocation
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Ammar Qammaz

Software / Research / Computer Vision / Robotics / AI

ammar.gr
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Highly experienced software engineer with 15+ years of experience in C / C++, 8+ years specializing on Computer Vision as member of the Computer Vision and Robotics Laboratory of the Foundation of Research and Technology of Greece. **Areas of expertise:** Computer vision, 3D pose estimation, real-time computing, neural networks, robotics, HCI. **Impact:** Among the top 50 most active Github developers in Greece, Author of MocapNET, 226+ citations, in charge of the human perception stack of the EU FP7 Hobbit robot, a.k.a. first robot trials in houses of elderly people in human history, GNU/Linux enthusiast with various open-source contributions.

Projects

AUTO-MNET, BonsApps (EU H2020 Grant no.101015848) AI Talent grant (Winner No. Bons_1OC_20) **2022 — Present**
- Technical lead, providing an embedded 3D real-time driver body pose estimation framework for cars to ensure safe driving.

I.C.HUMANS, HFRI (ΕΛΙΔΕΚ Proj. No. 91) **2021 — 2022**
- Unobtrusive capturing of human motion articulation and semantics.

Mingei, EU H2020 grant no. 822336 **2018 — 2020**
- 3D pose estimation from RGB videos of experts performing various historically important procedures for cultural preservation

Co4Robots, EU H2020-ICT-2016-1-73186 **2017 — 2019**
- Preparing deliverables, experiments on real-time RGB human perception on the ROS platform

Remote Acceleration service for low-Power Integrated systems and Devices (RAPID), EU H2020-ICT-644312 **2015 — 2017**
- 3D hand tracking from RGBD using heterogeneous computing for low-power integrated systems and devices

Hobbit The Mutual Care Robot, EU FP7-ICT-288146 **2013 — 2015**
- In charge of implementing the RGBD human perception stack of the Robot, emergency user fall detection, system design/tuning, web interface using my embedded AmmarServer, review meeting demos and on-site support on live trials.

Robohow.cog, EU FP7-ICT-288533 **2013 — 2015**
- Integration of FORTH 3D Hand Pose estimation and 3D Object Tracking framework with ROS and the PR2 robot, Work on force sensing based on vision (See CVPR '15 Publication), 3D tracking performance improvements (See BMVC '15 Publication).

GuarddoG Robot Project, BSc Thesis **2008 — 2012**
- Software and hardware for a small autonomous wheeled robot for domestic security and surveillance designed from scratch.

Experience

PhD Graduate Research Assistant **Jan 2019 — Present**
Computer Vision and Robotics Lab, Institute of Computer Science, Foundation of Research and Technology Heraklion
- Involvement in I.C.HUMANS, HealthSign and Mingei Projects
- Created MocapNET and Hierarchical Coordinate Descent algorithm for real-time 3D body and hand pose estimation from RGB.

MSc Graduate Research Assistant **Jan 2015 — Jan 2019**
Computer Vision and Robotics Lab, Institute of Computer Science, Foundation of Research and Technology Heraklion
- Involvement in Co4Robots, RAMCIP and RAPID Projects
- 3D Human pose estimation from RGBD video using a 3D reconstruction of the subject. 3D Hand Tracking and Gesture recognition.

Software Research Engineer **Jan 2013 — Jan 2015**
Computer Vision and Robotics Lab, Institute of Computer Science, Foundation of Research and Technology Heraklion
- Involvement in Hobbit, Robohow.cog Projects
- Model based 3D Hand and Object Pose Estimation from RGBD, developed RGBDAcquisition a framework for 3D data acquisition.

Communication systems operator **Nov 2010 — Aug 2011**
Hellenic Army
- Served as a communication systems operator on the HNDGS-NATO headquarters handling classified signals and state secrets.

Freelancer **Oct 2005 — Nov 2010**
- Developed, hosted and maintained e-commerce platforms for car dealerships, jewellery stores, and small businesses.
- Authored database software for medical clinics and dentists, still being used today.
- Developed shareware and freeware mini-games and utilities for windows PCs.

Education

Doctor of Philosophy, Computational and Cognitive Vision and Robotics, University of Crete — **Jan 2019 — Present**
Master of Science, Computational and Cognitive Vision and Robotics, University of Crete, GPA: 8.86/10.00 — **Oct 2015 — Nov 2018**
Bachelor of Science, Computer Science, Athens University of Business and Economics, GPA: 6.51/10.00 — **Sep 2004 — Sep 2012**

Technical Skills

Programming Languages	C, C++, Python, Shell scripting(BASH, Csh, Perl), Java, PHP, SQL, Matlab/Octave, FreePascal
Platforms	GNU/Linux, Android, Windows, Embedded (ATMEL, AVR, ESP, Arduino)
Frameworks	OpenCV, OpenGL, GLSL, CUDA, PThreads, ROS, PCL, Tensorflow, Keras, NumPy, Git, WxWidgets
Research Interests	Computer Vision, Image Processing, Computer Graphics, Robotics, HCI, Deep Neural Networks, Machine Learning, Artificial Intelligence, Embedded/Ubiquitous Computing

Publications

1. Qammaz, A. & Argyros, A. A. *Towards Holistic Real-time Human 3D Pose Estimation using MocapNETs* in *British Machine Vision Conference (BMVC 2021)* (BMVA, Nov. 2021).
2. Qammaz, A. & Argyros, A. *Occlusion-tolerant and personalized 3D human pose estimation in RGB images* in *2020 25th International Conference on Pattern Recognition (ICPR)* (2021), 6904–6911.
3. Bajones, M. *et al.* Results of field trials with a Mobile service robot for older adults in 16 private households. *ACM Transactions on Human-Robot Interaction (THRI)* **9,** 1–27 (2019).
4. Qammaz, A. & Argyros, A. A. *MocapNET: Ensemble of SNN Encoders for 3D Human Pose Estimation in RGB Images.* in *BMVC* (2019).
5. Qammaz, A. *et al.* On the Feasibility of Real-Time 3D Hand Tracking using Edge GPGPU Acceleration. *arXiv preprint arXiv:1804.11256* (2018).
6. Bajones, M. *et al.* Hobbit: providing fall detection and prevention for the elderly in the real world. *Journal of Robotics* (2018).
7. Qammaz, A., Michel, D. & Argyros, A. *A hybrid method for 3d pose estimation of personalized human body models* in *2018 IEEE Winter Conference on Applications of Computer Vision (WACV)* (2018), 456–465.
8. Michel, D., Qammaz, A. & Argyros, A. A. *Markerless 3d human pose estimation and tracking based on rgbd cameras: an experimental evaluation* in *Proceedings of the 10th International Conference on PErvasive Technologies Related to Assistive Environments* (2017), 115–122.
9. Foukarakis, M. *et al. A Robot-based Application for Physical Exercise Training.* in *ICT4AgeingWell* (2016), 45–52.
10. Kyriazis, N. *et al.* in *Man–Machine Interactions 4* 19–28 (Springer, 2016).
11. Pham, T.-H. *et al. Capturing and reproducing hand-object interactions through vision-based force sensing* in *Object Understanding for Interaction* (2015).
12. Qammaz, A., Kyriazis, N. & Argyros, A. A. *Boosting the Performance of Model-based 3D Tracking by Employing Low Level Motion Cues.* in *BMVC* (2015), 144–1.
13. Pham, T.-H. *et al. Towards force sensing from vision: Observing hand-object interactions to infer manipulation forces* in *Proceedings of the IEEE conference on computer vision and pattern recognition* (2015), 2810–2819.

Awards & Honors

2003 **Chosen for International Olympiad of Informatics 2004 Greek team after national programming contest**
2008 **Robotics, best of Show Award for GuarddoG project in the Athens Digital Week**
2010 **Robotics, third position award for GuarddoG project in the Athens Digital Week**
2022 **PhD work on MocapNET awarded a BonsApps (EU H2020 no.101015848) AI Talent grant (Winner No. Bons_1OC_20)**

Other Information & Interests

I have an INTJ Myers-Briggs personality type indicator and O+ blood type. In my spare time I like tweaking my custom built Quadcopter, maintaining my open source repositories, gaming, watching documentaries, amateur photography, sailing, latin dance and traveling.

Nationality & Languages

I have a European/Greek Nationality, I speak Greek (native speaker), English (FCE, CPE Cambridge diplomas) and I have rudimentary knowledge of the German language.

Links

E-Mail : ammarkov@gmail.com, WWW: http://ammar.gr/ , Github : https://github.com/AmmarkoV/, YouTube: http://www.youtube.com/user/ammarkov, HackerRank : https://www.hackerrank.com/ammarkov, Linked-In : https://www.linkedin.com/in/ammarkov, Instagram : https://www.instagram.com/ammarkov1/