

Hakan Karaoğuz

CONTACT INFORMATION

KTH RPL(CVAP)
EECS Department
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RESEARCH INTERESTS

Robot Vision, Computer Vision, Machine Learning, Mobile Robotics

EMPLOYMENT

KTH Royal Institute of Technology, Stockholm, Sweden

Postdoctoral Researcher, RPL (CVAP), **Oct 2015-Present**

- Worked on Building Semantic Object Maps for Long-Term Autonomy, as a part of EU STRANDS project.
- Working on Developing Methods for Visually Perceiving the Environment and Human Presence, as a part of SSF FACT project.
- Working on Terrain Classification and Segmentation, as a part of EU Centauro project.

EDUCATION

Boğaziçi University, Istanbul, Turkey

Ph.D., Electrical and Electronic Engineering, **2009-Aug 2015**

- Dissertation Topic: "Autonomous Multi-Robot Topological Spatial Cognition"
Advisor: Prof. H. Isil Bozma

M.S., Electrical and Electronic Engineering, **2007-2009**

Koç University, Istanbul, Turkey

B.S., Electrical and Electronic Engineering, **2002-2007**

COMPUTER SKILLS

- Code Repository: <https://github.com/hkaraoguz>
 - Languages: C/C++, Python, Objective-C, Golang, PHP, HTML, Unix shell scripts
 - Robotics and Vision: ROS (roscpp/catkin), OpenCV, Point Cloud Lib (PCL), MATLAB
 - Deep/Machine Learning: Caffe (Intermediate), PyTorch (Intermediate), Tensorflow (Beginner), Python-SciKit, MATLAB
 - IDE: Visual Studio, QtCreator, Eclipse, XCode
 - GUI: Qt (4/5)
 - Database: SQLite, MySQL, MongoDB
 - Mobile: IOS
 - Revision Control: Git, Mercurial
 - Embedded: Arduino, Freescale, Atmel, PIC
- Operating Systems: Unix/Linux, MacOS, Windows

LANGUAGE SKILLS

- Turkish: Mother Tongue
- English: Fluent

ACADEMIC EXPERIENCE & AWARDS

Semi-Finalist: LDV Vision Summit Entr. Computer Vision Challenge, New York, May 2015
Research Assistant: TAM Project, 2011- Jan 2015
Research Assistant: Tubitak Projects 111E285, 111E276
Organizing Committee Member: ICRA2016, EDUCON2014 , ASCC2013 and GameNets2009
Program Committee Member: AAMAS2018
Participant: 2nd PLUS Advanced School on Computer Vision, Pattern Recognition, and Image Processing, Italy, 2011.

THESES SUPERVISED

Vision based indoor object detection for a drone, Linnea Grip, M.Sc. Thesis, KTH, 2017
Autonomous Identification of Human Activity Regions, Lin Qi, M.Sc. Thesis, KTH, 2017

TEACHING EXPERIENCE

EL2310 Scientific Programming, KTH, Fall 2016

SELECTED PUBLICATIONS

- Erkent O. , H. Karaoguz, and H. I. Bozma, "Hierarchically Self-Organizing Visual Place Memory", *Advanced Robotics*, 31(16), pp. 865-879, 2017
- Karaoguz H, N. Bore, J. Folkesson and P. Jensfelt , "Human-Centric Partitioning of the Environment", *Int. Symp Rob. Hum. Interact. Com. (RO-MAN)*, 2017
- Karaoguz H, J. Folkesson and P. Jensfelt "Evaluation of R-FCN Features for Object Segmentation", *The First Swedish Symposium on Deep Learning*, 2017
- Karaoguz H. and H. I. Bozma, "Merging Appearance-Based Spatial Knowledge in Multirobot Systems," *In Proc. Int. Conf. Intell. Rob. Sys. (IROS)*, 2016
- Karaoguz H., and H.I. Bozma, "An Integrated Model of Autonomous Topological Spatial Cognition", *Autonomous Robots*, vol. 40, pp. 1379-1402, 2016
- Karaoguz H., and H. I. Bozma, "Topological Place Recognition Based on Long-Term Memory Retrieval", *Int. Conf. Adv. Robot. (ICAR)*, 2015 (Won Best Student Paper Award)
- Karaoguz H., O. Erkent and H.I. Bozma, "RGB-D based place representation in topological maps", *Machine Vision and Applications*, 25(8): 1913 - 1927, 2014
- Karaoguz H. and H.I. Bozma, "Reliable Topological Place Detection in Bubble Space", *In Proc. Int. Conf. on Robot. Autom. (ICRA)*, 697-702, 2014