Gülcan Can

Contact Information

GSM: +90 (536) 550 89 60
E-mail: gulcan@ceng.metu.edu.tr
Website: http://www.ceng.metu.edu.tr/ gulcan/

Personal Information

Place and Date of Birth: Ankara(Turkey), December 1, 1988
Nationality: Turkish

Education

M.S., Computer Engineering, Middle East Technical University, Ankara, Turkey
- October 2010 - Expected: June 2013.
- Thesis topic: Conditional and Hierarchical Modelling of Remote Sensing Objects with Irregular Conditional Random Fields
- Advisor: Prof. Dr. Fatoş T. Yarman Vural
- Field: Computer Vision & Pattern Recognition
- Cumulative GPA: 3.57 over 4.00

B.S., Computer Engineering, Bilkent University, Ankara, Turkey
- September 2006 - June 2010.
- B.S. Project: Question answering system
- Course Project: Object recognition using SIFT keypoints and "bag-of-words" model
- Cumulative GPA: 3.21 over 4.00

High School, Ankara Science High School, September 2002 - June 2006.

Experience

Department of Computer Engineering, METU, Ankara, Turkey

Research Assistant **August 2010 - current**

Project: Processing of Remote Sensing Imagery (Land Use/Land Cover Classification and Analysis)

- Performing active research in a computer vision/pattern recognition project which is run in close collaboration with several development teams in METU. The main work consists of developing state-of-the-art algorithms to be used in classification/detection of various types of regions/objects in satellite images. For that purpose, lots of hands-on experience is gained regarding various approaches in feature selection (texture features based on filter responses or gray-level co-occurrence matrix, histogram-based features such as HOG and LBP, keypoint features such as SIFT), clustering (k-means, mean-shift), segmentation (watershed, region-merging, mean-shift, graph-based), and classifier selection (SVM and kernel selection, decision tree, k-NN, Markov and conditional random fields).

Department of Computer Engineering, METU, Ankara, Turkey

Teaching Assistant **September 2011 - current**

- Managing homeworks and labs for department courses such as data structures, introduction to programming, C programming, and providing consultation to senior design project groups.

Current and Further Research

Actively working on probabilistic graphical models and their application on visual analysis of satellite images, developed under supervision of Fatoş T. Yarman Vural. Have obtained a statement of accomplishment from the online course "Probabilistic Graphical Models" taught by Prof. Dr. Daphne Koller on Coursera.

For further study, unsupervised or semi-supervised graphical model approaches would be interesting and challenging. It may also be interesting to work on deep learning for unsupervised feature selection which is a hot-topic recently.

Publications

- Gülcan Can, Orhan Firat, Fatoş T. Yarman Vural, *Contextual Object Recognition with Conditional Random Fields*, 21th Signal Processing and Communications Applications Conference, 2013. (oral)
- Gülcan Can, Orhan Firat, Fatoş T. Yarman Vural, *Conditional Random Fields for Land Use/Land Cover Classification and Complex Region Detection*, 14th IAPR International Workshop on Structural and Syntactic Pattern Recognition (SSPR, jointly organized by ICPR), 2012. (oral)
- Ümit Ruşen Aktaş, Gülcan Can, Fatoş T. Yarman Vural, *Edge Aware Segmentation in Satellite Imagery: A Case Study of Shoreline Detection*, 7th IAPR Workshop on Pattern Recognition in Remote Sensing (PRRS, , jointly organized by ICPR), 2012. (oral)
- Ümit Ruşen Aktaş, Gülcan Can, Fatoş T. Yarman Vural, *A Robust Approach for Shoreline Detection in Satellite Imagery*, 20th Signal Processing and Communications Applications Conference, April 2012. (oral)
- Ulya Bayram, Gülcan Can, Şebnem Düzgün, Neşe Yalabik, *Evaluation of Textural Features for Multispectral Images*, SPIE Remote Sensing Conference, 2011. (oral)
- Ulya Bayram, Gülcan Can, Bariş Yüksel, Şebnem Düzgün, Neşe Yalabik, *Unsupervised land use - land cover classification for multispectral images*, 19th Signal Processing and Communications Applications Conference, 2011. (oral)

Awards and Honors

- Best paper award at 3rd Computer Science Student Workshop (2012).
- Full-time scholarship by Bilkent University based on the ranking of ÖSS 2006 (Student Selection Exam), among 2 million candidates.
- Encouragement award in biology at 14th MEF Projects Competition in high school (2005)

Technical Background

Programming: C++, C, Java, MATLAB, Python, HTML, Assembly
Technologies & Applications:

- Google App Engine: Coding backends for an enterprise Java project.
- LaTeX, Microsoft Office, Open Office, and similar packages.

Operating Systems: Microsoft Windows 7/XP, various Linux distributions.
Databases: MySQL.
Other: UML, XML etc.

Interests

Reading fantastic novels
Squash, swimming and Tango

Languages

Turkish (Native)
English (Fluent, Toefl Score: 99)
German (Beginner)
Japanese (Beginner)

Key Skills

Motivated self-learner, analytic problem solver
Deep understanding of computer vision and pattern recognition algorithms, with long-term implementation experience in MATLAB
Extensive development experience in object oriented languages (C++, Java) and C