

Candan Eylül Kilsedar

Curriculum Vitae

Personal Information

Date of birth July 5, 1989
Nationality Turkish
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Affiliation GIS Team, GEOLab, Department of Civil and Environmental Engineering, Politecnico di Milano, Piazza Leonardo da Vinci 32, 20133, Milan, Italy

Education

2015–present **PhD in Environmental and Infrastructure Engineering**, *Politecnico di Milano*, Milan, Italy.
Using free and open source software for visualization of multidimensional big open urban geospatial data.
2012–2014 **Master of Science in Computer Science and Engineering**, *Politecnico di Milano*, Milan, Italy.
2007–2012 **Bachelor of Science in Computer Science and Engineering**, *Sabancı University*, Istanbul, Turkey.
2011, spring **Erasmus in Information Technology**, *Uppsala University*, Uppsala, Sweden.

Work Experiences

February **Research Fellow**, *Politecnico di Milano*, Milan, Italy.
2015–present Contracts have been titled in order as "Developing the two-dimensional Web GIS of the Interreg project between Italy and Switzerland, The Paths of Via Regina, for computer and mobile devices (smartphone and tablet); test and validation of the applications developed", "GIS tools for the Web visualization and processing of geospatial data", "Geomatics, citizen science, big geo data for environment and territory: viewers, mobile devices, applications", "Multidimensional Web visualization for geospatial data in the context of the project URBAN GEO BIG DATA (URBAN GEOmatics for Bulk Information Generation, Data Assessment and Technology Awareness)".
2011, summer **Intern**, *Kobe Institute of Computing, KIC*, Kobe, Japan.
Creating animations using Processing library that can be interacted through a floating image touch display.

Teaching Experiences

- 2016–2019 **Teaching Assistant**, *Politecnico di Milano*, Milan, Italy.
Teaching the Master of Science students of Geographic Information Systems (GIS) course in the Geoinformatics Engineering programme GeoServer, GDAL, the basics of Web programming, OpenLayers, Leaflet, QGIS plugin qgis2web and Mapbox Studio.
- June 2018 **Teacher**, *Politecnico di Milano*, Lecco, Italy.
Teaching within Geodesy and Geoinformatics for Sustainable Development in Jordan (GEO4D) project Geospatial Database Management Systems for Big Data, Examples of Mobile Mapping Applications and OpenLayers.
- March 2017 **Teacher**, *Cefriel*, Milan, Italy.
Teaching introduction to MapServer, GeoServer, OpenLayers, Leaflet and NASA Web WorldWind.
- 2016–2017 **Teaching Assistant**, *Politecnico di Milano*, Como, Italy.
Teaching the Master of Science students of Remote Sensing course in the Environmental and Geomatic Engineering programme SNAP (Sentinel Application Platform) software.
- 2014–2016 **Teaching Assistant**, *Politecnico di Milano*, Como, Italy.
Teaching the Master of Science students of Geographic Information Systems (GIS) course in the Environmental and Geomatic Engineering programme OpenLayers and Leaflet.

Main Projects

URBAN GEOmatics for Bulk Information Generation, Data Assessment and Technology Awareness (URBAN GEO BIG DATA) (2017–2020)

Description The project contributes to improving the exploitation of new data from Earth observation and mobile sensors, for a better understanding of some urban dynamics. It extracts information from data and represents it for better comprehension aiming at an improved public engagement. The author's responsibility is to visualize data and enable raster data processing on the Web. It is a Project of National Interest (PRIN) funded by the Italian Ministry of Education, University and Research (MIUR). The source code is available at <https://github.com/kilsedar/urban-geo-big-data-3d>.

Tools Apache Web Server, GeoServer, CouchDB, PouchDB, rasdaman, Cesium, NASA Web WorldWind, QGIS

Land Cover Collector (2018)

Description The application is developed to collect data on land cover classification using ten classes of GlobeLand30. It is published on Google Play and App Store, and it is available on the Web at <https://landcover.com.polimi.it/collector/>. The application is developed within Capacity Building for High-Resolution Land Cover Inter-comparison and Validation project, funded by ISPRS Education and Capacity Building Initiatives 2018. The source code is available at <https://github.com/kilsedar/land-cover-collector>.

Tools Apache Web Server, CouchDB, PouchDB, Cordova, Leaflet

[Google Summer of Code project, 3D OSM Plugin API \(2017\)](#)

Description The plugin API developed for NASA Web WorldWind virtual globe visualizes OpenStreetMap (OSM) data on the virtual globe. Buildings can be visualized in 3D using their footprint and height information available in OSM database. The rest of the OSM data are visualized in 2D. The source code is available at <https://github.com/kilsedar/3dosm>. <http://osm.eoapps.eu> can be used to get more information and visualize the data, which reached the finals at NASA Europa Challenge in 2017.

Tools NASA Web WorldWind, QGIS, GRASS GIS

[MYGEOSS MIGRATE \(2016\)](#)

Description Funded under the third call of MYGEOSS project by the Joint Research Center (JRC) of the European Commission, MIGRATE is a Web application developed with a gamification approach with the purpose of educating and raising awareness about the phenomenon of migration in Europe. The source code is available at <https://github.com/kilsedar/migrate>. The author was one of the two developers in this project.

Tools Django, PostgreSQL, OpenLayers

[The Paths of Via Regina \(2015\)](#)

Description The Interreg project between Italy and Switzerland, The Paths of Via Regina aims to create new tools to promote cultural heritage in the cross-border area around Via Regina. The team developing the Web GIS of the project, available at <http://viaregina3.como.polimi.it/ViaRegina/>, was composed of the author and developers from The University of Applied Sciences and Arts of Southern Switzerland.

Tools Apache Web Server, GeoServer, PostgreSQL, PostGIS, pgRouting, ZOO, OpenLayers, TripAdvisor API

[Other Minor Projects \(2014–2018\)](#)

Description During the course of her MSc and PhD, the author was involved in various projects: Buried Torrents, Via Regina 3D, heatmap visualization of social media data, Web GIS for ASF bus company, website of GIS Team in GEOLab, Brezza sull'Adda, Osaka bike sharing, Lake Poli School desktop and mobile Web GIS.

Tools Apache Web Server, GeoServer, CouchDB, PouchDB, OpenDataKit, OpenLayers, Leaflet, NASA Web WorldWind, Ext JS, GeoExt

Technical Skills

OS	Linux (Ubuntu), macOS, Windows
Languages	JavaScript, HTML5, CSS3, Python, SQL
Databases	PostgreSQL (with PostGIS and pgRouting), CouchDB, PouchDB, rasdaman
Servers	Apache HTTP Server, Apache Tomcat, MapServer, GeoServer
Desktop GIS	QGIS, GRASS GIS
Web GIS	OpenLayers, Leaflet, NASA Web WorldWind, Cesium
App. Dev.	Django, Cordova, OpenDataKit

Others VCS: Git, responsive UI design: Bootstrap

Selected Publications

- 2018 - Kilsedar, C. E., Bratic, G., Molinari, M. E., Minghini, M., Brovelli, M. A. (2019). Open educational resources for validation of global high-resolution land cover maps. *PeerJ Preprints*. doi:10.7287/peerj.preprints.27214v2
- Brovelli, M. A., Minghini, M., Molinari, M. E., Kilsedar, C. E., Wu, H., Zheng, X., Chen, J., Shu, P. (2018). Open source software and open educational material on land cover maps intercomparison and validation. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XLII-4*, 61-68. doi:10.5194/isprs-archives-XLII-4-61-2018
- Molinari, M. E., Oxoli, D., Kilsedar, C. E., Brovelli, M. A. (2018). User geolocated content analysis for urban studies: investigating mobility perception and hubs using Twitter. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XLII-4*, 439-442. doi:10.5194/isprs-archives-XLII-4-439-2018
- 2017 - Aiello, M., Brovelli, M. A., Kilsedar, C. E., Zurbarán Nucci, M. A., Minghini, M., Gianinetto, M. (2017). Migration patterns in Europe: Geomatics and gamification techniques to raise the awareness of European citizens on migration flows. *Geoenvironment and Mining, 151(2)*, 9-14. [download]
- Kilsedar, C. E., Oxoli, D., Frassinelli, F., Montani, M., Minghini, M. (2017). Humanitarian mapping with a student association: PoliMappers. *Geomatics Workbooks 13*, 130-136. [download]
- Arias Muñoz, C., Brovelli, M. A., Kilsedar, C. E., Moreno-Sanchez, R., Oxoli, D. (2017). Web mapping architectures based on open specifications and free and open source software in the water domain. *The ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences, IV-2/W4*, 23-30. doi:10.5194/isprs-annals-IV-2-W4-23-2017
- Pirotti, F., Brovelli, M. A., Prestifilippo, G., Zamboni, G., Kilsedar, C. E., Piragnolo, M., Hogan, P. (2017). An open source virtual globe rendering engine for 3D applications: NASA WorldWind. *Open Geospatial Data, Software and Standards, 2(4)*. doi:10.1186/s40965-017-0016-5
- 2016 - Brovelli, M. A., Kilsedar, C. E., Zamboni, G. (2016). Visualization of VGI data through the new NASA Web WorldWind virtual globe. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XLI-B4*, 205-209. doi:10.5194/isprsarchives-XLI-B4-205-2016
- Brovelli, M. A., Kilsedar, C. E., Minghini, M., Oxoli, D. (2016). GIS-based analysis of a peculiar effect of urbanization: the case of the buried watercourses of Como (Italy). *Applied Geomatics, 2(8)*, 91-105. doi: 1-15 10.1007/s12518-016-0169-4
- Zurbarán Nucci, M. A., Oxoli, D., Kilsedar, C. E., Wightman, P., Brovelli, M. A. (2016). Joining spatial visualization tools with social media data using free and open source software. *Proceedings of Location Based Services, 13*, 221-224. [download]

2015 - Antonovic, M., Brovelli, M. A., Cannata, M., Cardoso, M., Kilsedar, C. E., Minghini, M., Zamboni, G. (2015). Promoting slow tourism through FOSS4G Web mapping: an Italian-Swiss case study. *Geomatics Workbooks 12*, 99-104. [download]

Selected Attended Events and Training

- July 2018 State of the Map (SotM) 2018, volunteered in the organization of the conference, organized a mapathon as the president of PoliMappers, presented "2D and 3D visualization of OpenStreetMap data", Politecnico di Milano, Milan, Italy.
- September 2016 The workshop of the COST Action IC1203 ENERGIC, "Crowdsourced Information and Citizen Science: Critical Aspects and Future", and presented "Citizen Science and Cultural Heritage", University of Siena, Siena, Italy.
- August 2016 FOSS4G Conference in Bonn, Germany, participated in the following code sprint and contributed to the documentation of GeoServer, helped in the organization of both conference and code sprint.
- June 2016 International Society for Photogrammetry and Remote Sensing (ISPRS) Summer School: "Natural Resource Management: from Data Processing to Web Publishing", Telč, Czech Republic.
- October 2015 The hackathon supporting the Sentinel Application Platform (SNAP) in the framework of the EO Open Science 2.0 conference, at European Space Agency (ESA) Centre for Earth Observation (ESRIN), Frascati, Italy.

Associations

Open Source Geospatial Foundation (OSGeo)

2017 Charter member

PoliMappers

2016 President between November 2016 and December 2018, and faculty advisor since December 2018. PoliMappers is a volunteer students' group and a chapter of YouthMappers. The mission of the group is to train and motivate the next generation of volunteer mappers and to do mapping using free and open source software within the university as well as primary and secondary schools. In 2018 PoliMappers received various awards and participated in the organization of the conference State of the Map 2018.

Language Skills

Turkish Mother tongue

English Advanced

Italian Elementary