



# Eda Bayram

PhD candidate, passionate about research on machine learning for graph structured data. A sound background in mathematics including linear algebra, probability, optimization and signal processing. Programming experience in Python, C/C++ and Matlab.

✉ [eda.bayram@epfl.com](mailto:eda.bayram@epfl.com)  
🏠 Lausanne, Switzerland  
🌐 [bayrameda.github.io](https://bayrameda.github.io)

## Education

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| Feb 2017 -<br>Sep 2014 | <b>M.Sc. in Electrical and Electronics Engineering</b> (Honor Student, GPA: 3.71/4.00)<br><i>Middle East Technical University (METU), Turkey</i> <ul style="list-style-type: none"><li>• Specialization on adaptive signal processing with courseworks on linear algebra, optimization, machine learning, computer vision and image processing</li><li>• Thesis study on exploitation of spectral graph theory and graph signal processing frameworks for the analysis of 3D LiDAR point clouds under co-supervision of Prof. Aydın Alatan and Elif Vural.</li></ul> |
| Jun 2013 -<br>Sep 2009 | <b>B.Sc. in Electrical and Electronics Engineering</b> (Honor Student, GPA: 3.38/4.00)<br><i>Middle East Technical University (METU), Turkey</i> <ul style="list-style-type: none"><li>• Senior year specialization on telecommunications and signal processing</li><li>• Graduation project: Interior route-finding, wearable assistive device for visual defective people</li></ul>                                                                                                                                                                                |

## Work and Research Experience

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| Apr 2021 -<br>Apr 2017 | <b>Doctoral Assistant</b> under supervision of Prof. Pierre Vandergheynst<br><i>LTS2, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland</i> <ul style="list-style-type: none"><li>• Thesis: Representation Learning on Multi-relational Data.</li><li>• Supervising multiple master projects in graph signal processing in multi-modal settings and spectral graph filtering based classification of Airborne LiDAR point clouds.</li><li>• Teaching assistant of <i>Digital Signal Processing</i> and <a href="#">Network Tour of Data Science</a>.</li></ul> |
| Jan 2017 -<br>May 2015 | <b>System and Design Engineer</b><br><i>Aselsan, SST (R&amp;D Defense Industry), Turkey</i> <ul style="list-style-type: none"><li>• Research and development of target tracking algorithms for day-TV and thermal camera systems.</li></ul>                                                                                                                                                                                                                                                                                                                               |
| Sep 2015 -<br>Jun 2015 | <b>Research Intern</b><br><i>Signal Processing Laboratory, EPFL, Switzerland</i> <ul style="list-style-type: none"><li>• Spectral graph-based motion estimation for Omnidirectional videos</li></ul>                                                                                                                                                                                                                                                                                                                                                                      |
| Apr 2015 -<br>Jul 2013 | <b>Software Engineer</b><br><i>Aselsan, MGEO (R&amp;D Defense Industry), Turkey</i> <ul style="list-style-type: none"><li>• Software design and development for the communication of the peripheral modules in embedded systems.</li></ul>                                                                                                                                                                                                                                                                                                                                |
| Jun 2013 -<br>Nov 2012 | <b>Part-time Software Engineer</b><br><i>Aselsan, SST (R&amp;D Defense Industry), Turkey</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## Publications

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- Eda Bayram, Alberto Garcia Duran and Robert West, "Node Attribute Completion on Knowledge Graphs with Multi-Relational Propagation", *Under review*, Nov 2020
- Eda Bayram, Dorina Thanou, Elif Vural and Pascal Frossard, "Mask Combination of Multi-layer Graphs for Global Structure Inference", *IEEE Transactions on Signal and Information Processing over Networks* 6 : 394-406, 2020
- Eda Bayram, Pascal Frossard, Elif Vural and Aydin Alatan, "Analysis of airborne LiDAR point clouds with spectral graph filtering", *IEEE Geoscience and Remote Sensing Letters* 15.8 : 1284-1288., 2018
- Eda Bayram, Elif Vural, and Aydin Alatan. "A graph signal filtering-based approach for detection of different edge types on airborne lidar data" *Lidar Technologies, Techniques, and Measurements for Atmospheric Remote Sensing XIII. Vol. 10429. International Society for Optics and Photonics*, 2017.
- Eda Bayram, "Spectral Graph Based Approach for Analysis of 3D LiDAR Point Clouds" *Master Thesis, METU, Ankara*, 2017.

## Languages

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**Turkish:** Native  
**English:** Fluent  
**French:** A2/B1  
**German:** A1/A2