Oğuzhan Fatih Kar

PERSONAL DETAILS

Mail	oguzhan.kar@epfl.ch
Website	https://ofkar.github.io/
Interests	computer vision, machine learning, computational imaging, inverse problems

EDUCATION

Ph.D. in Computer Science 2019-Present
Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland
Advisor: Amir Zamir

M.S. in Electrical and Electronics Engineering (CGPA: 3.93/4.00) 2017-2019
Middle East Technical University (METU), Ankara, Turkey
Advisor: Figen S. Oktem
Thesis: Computational spectral imaging techniques using diffractive lenses and compressive sensing

B.S. in Electrical and Electronics Engineering (CGPA: 3.90/4.00) 2013-2017
Middle East Technical University (METU), Ankara, Turkey

PROFESSIONAL EXPERIENCE

Research and Teaching Assistant 2019-Present
Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

- Research on robust learning for visual perception.
- TA courses: Analysis I (Fall 2020), Analysis II (Spring 2020, 2021).

Research Engineer 2017-2019
ASELSAN Research Center, Ankara, Turkey

- Developed and implemented novel reconstruction techniques for computational imaging.
- Built optical setups for computational imaging.

Research Intern 2016
ASELSAN Research Center, Ankara, Turkey

- Developed and implemented non-uniformity correction algorithms for infrared imaging.

Research Intern 2015
TUBITAK SAGE, Ankara, Turkey

- Implemented communication protocols between FPGA and ADC.

AWARDS AND HONORS

EPFL CS Department: EDIC Fellowship for the first year of Ph.D. studies (52k CHF)
TUBITAK (Scientific and Technical Research Council of Turkey): Full scholarship for M.S. studies
IEEE: Travel award for ICIP 2018
METU EEE Department: Dr. Bulent Kerim Altay award for 4.0/4.0 GPA in Fall 2015 semester
METU EEE Department: Best Poster Presentation award in GRAD STAR 2018 Departmental Poster Competition
METU EEE Department: Graduate courses performance award 2019
8 times listed in Dean's High Honor Roll, Middle East Technical University, 2013-2017
Ranked 228th in National University Entrance Exam 1st stage among 2 million students
Ranked 159th in National University Entrance Exam 2nd stage among 2 million students

PUBLICATIONS

Conference Publications

1. T. Yeo*, **O. F. Kar***, A. Zamir, "Robustness via cross-domain ensembles." Arxiv, 2021. (In submission)
1. A. Zamir*, A. Sax*, T. Yeo, **O. F. Kar**, N. Cheerla, R. Suri, Z. Cao, J. Malik, L. Guibas, "Robust learning through cross-task consistency." Arxiv, 2020. (**Also in CVPR 2020 as oral presentation with best paper award nomination**)
2. O. F. Kar, A. Gungor, H. E. Guven, "Real-time compressive video reconstruction for spatial multiplexing cameras." IEEE Global Conference on Signal and Information Processing (GLOBALSIP), 2019. (**Oral presentation**)
3. O. F. Kar, A. Gungor, H. E. Guven, "Learning based regularization for spatial multiplexing cameras." IEEE Global Conference on Signal and Information Processing (GLOBALSIP), 2019. (**Poster presentation**)
4. A. Gungor*, **O. F. Kar***, "A transform learning based deconvolution technique with super-resolution and microscanning applications." IEEE International Conference on Image Processing (ICIP), 2019. (**Poster presentation**)
5. O. F. Kar, F. S. Oktem, "Fast computational spectral imaging using photon sieves." OSA Imaging and Applied Optics Congress, 2019. (**Oral presentation**)
6. O. F. Kar, A. Gungor, H. E. Guven, "Optimal number of measurement analysis for coded compressive focal plane array imager." IEEE Signal Processing and Communications Applications Conference (SIU), 2019. (**Oral presentation**) (**National conference**)
7. O. F. Kar, A. Gungor, H. E. Guven, "Compressive focal plane array imager reconstruction using learning based regularization." IEEE Signal Processing and Communications Applications Conference (SIU), 2019. (**Oral presentation**) (**National conference**)
8. O. F. Kar, A. Gungor, S. Ilbey, C. B. Top, H. E. Guven, "A performance analysis on the optimal number of measurements for coded compressive imaging." IEEE Global Conference on Signal and Information Processing (GLOBALSIP), 2018. (**Oral presentation**)
9. A. Gungor, **O. F. Kar**, H. E. Guven, "A matrix-free reconstruction method for compressive focal plane array imaging." IEEE International Conference on Image Processing (ICIP), 2018. (**Poster presentation**)
10. O. F. Kar, U. Kamaci, F. C. Akyon, F. S. Oktem, "Compressive photon-sieve spectral imaging." OSA Imaging and Applied Optics Congress, 2018. (**Oral presentation**)
11. O. F. Kar, A. Gungor, S. Ilbey, H. E. Guven, "An efficient parallel algorithm for single-pixel and FPA imaging." SPIE Defense and Commercial Sensing Conference, 2018. (**Oral presentation**)
12. O. F. Kar, A. Gungor, H. E. Guven, "An adaptive relaxed alternating direction method of

multipliers for compressive focal plane array imaging." IEEE Signal Processing and Communications Applications Conference (SIU), 2018. (**Oral presentation**) (**National conference**)
13. O. F. Kar, U. Kamaci, F. C. Akyon, F. S. Oktem, "Effect of different sparsity priors on compressive photon-sieve spectral imaging." IEEE Signal Processing and Communications Applications Conference (SIU), 2018. (**Oral presentation**) (**National conference**)

Journal Publications

1. O. F. Kar, F. S. Oktem, "Compressive spectral imaging with diffractive lenses." Optics Letters, 2019.
2. F. S. Oktem, **O. F. Kar**, C. D. Bezek, F. Kamalabadi , "High-resolution multi-spectral imaging with diffractive lenses and learned reconstruction." IEEE Transactions on Computational Imaging, 2021.

ACADEMIC ACTIVITIES

Academic Demo:

- **O. F. Kar**, A. Sax, T. Yeo, A. Zamir, "Robust Learning Through Cross-Task Consistency", ECCV 2020.

Journal Reviewer:

- Optics Express (2019)
- Applied Optics (2019)

Conference Reviewer:

- ECCV 2020
- EUSIPCO 2019

SKILLS

Languages	Turkish (mother tongue) English (very fluent, TOEFL score: 106/120) French (beginner)
Computer	Python, PyTorch, MATLAB, C, C++, LaTeX, Linux, Bash, Javascript