Oğuzhan Fatih Kar

PERSONAL DETAILS

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

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), Visual intelligence : machines and minds (Fall 2021).

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

- Research on novel reconstruction techniques 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 Computer and Communication Sciences Doctoral Program: EDIC Fellowship for the first year of Ph.D. studies (52k CHF), 2019-2020
TUBITAK (Scientific and Technical Research Council of Turkey): Full scholarship for M.S. studies, 2017-2019
METU Graduate School of Natural and Applied Sciences: Graduate courses performance award, 2019
METU Electrical and Electronics Engineering Department: Best Poster Presentation award in GRAD STAR Departmental Poster Competition, 2018
IEEE: Travel award for International Conference on Image Processing (ICIP), 2018
METU Electrical and Electronics Engineering Department: Dr. Bulent Kerim Altay award for 4.0/4.0 GPA in Fall semester, 2015
8 times (all semesters) listed in Dean's High Honor Roll, METU, 2013-2017
Ranked 228th in National University Entrance Exam 1st stage among 2 million students, 2012
Ranked 159th in National University Entrance Exam 2nd stage among 2 million students, 2012

PUBLICATIONS

Conference Publications (* denotes equal contribution)

1. O. F. Kar, T. Yeo, A. Atanov A. Zamir, "3D common corruptions and data augmentation." CVPR, 2022. Project page: https://3dcommoncorruptions.epfl.ch/
2. T. Yeo*, **O. F. Kar***, A. Zamir, "Robustness via cross-domain ensembles." ICCV, 2021. (**Oral presentation, top 3%**). Project page: https://crossdomain-ensembles.epfl.ch/
3. 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. CVPR, 2020. (**Oral presentation, best paper award nomination**). Project page: https://consistency.epfl.ch/
4. 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**)
5. 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.
6. 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.
7. O. F. Kar, F. S. Oktem, "Fast computational spectral imaging using photon sieves." OSA Imaging and Applied Optics Congress, 2019. (**Oral presentation**)
8. 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**)
9. 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**)
10. 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**)
11. 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.
12. 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**)
13. 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**)
14. 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**)
15. 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. 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.
2. O. F. Kar, F. S. Oktem, "Compressive spectral imaging with diffractive lenses." Optics Letters, 2019.

OTHER 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

ELLIS Evaluator:

- 2021 Ph.D. applications (pre-screening)

SKILLS

Languages	Turkish (mother tongue) English (very fluent, TOEFL score: 106/120) French (A2)
Computer	Python, PyTorch, MATLAB, C, C++, LaTeX, Linux, Bash, Javascript