Oğuzhan Fatih Kar

PERSONAL DETAILS

Mail	oguzhan.kar@epfl.ch
Website	https://ofkar.github.io/
Interests	robustness, 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 robustness of machine learning models.
- TA courses: Analysis I (Fall 2020, 2022), Analysis II (Spring 2020, 2021), Analysis-A (Spring 2022), Visual intelligence : machines and minds (Fall 2021, Spring 2023 (Head TA)).

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. T. Yeo, **O. F. Kar**, O. Beker, Z. Sodagar, A. Zamir, "Fast adaptation of neural networks using test-time feedback." In review, 2022.
2. O. F. Kar, T. Yeo, A. Atanov, A. Zamir, "3D common corruptions and data augmentation." CVPR, 2022. (**Oral presentation, top 4%**). Project page: https://3dcommoncorruptions.epfl.ch/
3. O. F. Kar, T. Yeo, A. Zamir, "3D common corruptions for object recognition." ICML Shift Happens Workshop, 2022. (**Invited**). Project page: https://3dcommoncorruptions.epfl.ch/
4. 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/
5. 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/
6. 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**)
7. 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.
8. 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.
9. O. F. Kar, F. S. Oktem, "Fast computational spectral imaging using photon sieves." OSA Imaging and Applied Optics Congress, 2019. (**Oral presentation**)
10. 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**)
11. 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**)
12. 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**)
13. 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.
14. 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**)
15. 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**)
16. 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**)
17. 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

Invited Talks:

- **Rising Stars in AI Symposium**, KAUST, Saudi Arabia (February 2023).
- **TrustML Young Scientist Seminar**, RIKEN AIP, Japan (November 2022, remote).

Academic Demo:

- **O. F. Kar**, A. Sax, T. Yeo, A. Zamir, "Robust learning through cross-task consistency." ECCV, 2020.

Journal Reviewer:

- Optics Express, Applied Optics

Conference Reviewer:

- ICLR, CVPR, ECCV, ICCV, EUSIPCO

PhD Application Evaluator:

- ELLIS: Fall 2021 (pre-screening)
- EPFL EDIC: Fall 2021, Spring 2022, Fall 2022

Head Teaching Assistant:

- CS-503: Visual intelligence: machines and minds (Spring 2023)

EPFL EDIC Buddy Program:

- Volunteered at the PhD Buddy Program aimed at helping new students integrate with the school and Lausanne for the years 2021, 2022, 2023.

SKILLS

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