

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

Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

Advisor: Amir Zamir

Start-End Dates: September 2019 - September 2024 (expected)

Ongoing

M.S. in Electrical and Electronics Engineering

Middle East Technical University (METU), Ankara, Turkey

Advisor: Figen S. Oktem

Thesis: Computational spectral imaging techniques using diffractive lenses and compressive sensing

CGPA: 3.93/4.00

Start-End Dates: September 2017 - July 2019

Completed

B.S. in Electrical and Electronics Engineering

Middle East Technical University (METU), Ankara, Turkey

CGPA: 3.90/4.00

Start-End Dates: September 2013 - June 2017

Completed

PROFESSIONAL EXPERIENCE

Student Researcher

Google, Zurich, Switzerland

Start-End Dates: November 2023 - March 2024

- Research on multi-modal foundational models.
- Hosted by Alessio Tonioni and Federico Tombari

Current

Research and Teaching Assistant

Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

Start-End Dates: September 2019 - September 2024 (expected)

- Research on robust, adaptive, multi-modal 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 2023-2024 (**Head TA**)).

Current

Research Engineer

ASELSAN Research Center, Ankara, Turkey

Start-End Dates: July 2017 - August 2019

- Research on novel reconstruction techniques for computational imaging.

Past

Research Intern

Past

ASELSAN Research Center, Ankara, Turkey
Start-End Dates: June 2016 - July 2016

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

Research Intern

Past

TUBITAK SAGE, Ankara, Turkey
Start-End Dates: June 2015 - July 2015

- 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

Also available in Google Scholar.

Conference Publications (* denotes equal contribution)

1. **O. F. Kar**, A. Tonioni, P. Poklukar, A. Kulshrestha, A. Zamir, F. Tombari, "BRAVE: Broadening the visual encoding of vision-language models." arXiv, 2024 (in review). Project page: Link

2. R. Bachmann*, **O. F. Kar***, D. Mizrahi*, A. Garjani, M. Gao, D. Griffiths, J. Hu, A. Dehghan, A. Zamir, "An Any-to-Any Vision Model for Tens of Tasks and Modalities." arXiv, 2024 (in review). Project page: Link

3. D. Mizrahi*, R. Bachmann*, **O. F. Kar**, T. Yeo, M. Gao, A. Dehghan, A. Zamir, "4M: Massively Multimodal Masked Modeling." NeurIPS, 2023 (**Spotlight, top 4%**). Project page: Link

4. T. Yeo, **O. F. Kar**, Z. Sodagar, A. Zamir, "Rapid Network Adaptation: Learning to Adapt Neural Networks Using Test-Time Feedback." ICCV, 2023. Project page: Link

5. **O. F. Kar**, T. Yeo, A. Atanov, A. Zamir, "3D common corruptions and data augmentation." CVPR, 2022. (**Oral presentation, top 4%**). Project page: Link

6. **O. F. Kar**, T. Yeo, A. Zamir, "3D common corruptions for object recognition." ICML Shift Happens Workshop, 2022. (**Invited**). Project page: Link

7. T. Yeo*, **O. F. Kar***, A. Zamir, "Robustness via cross-domain ensembles." ICCV, 2021. (**Oral presentation, top 3%**). Project page: Link

8. 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: [Link](#)

9. **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**)

10. **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.

11. 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.

12. **O. F. Kar**, F. S. Oktem, “Fast computational spectral imaging using photon sieves.” OSA Imaging and Applied Optics Congress, 2019. (**Oral presentation**)

13. **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**)

14. **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**)

15. **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**)

16. 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.

17. **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**)

18. **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**)

19. **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**)

20. **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).

Academic Demo:

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

Journal Reviewer:

- Optics Express (2019, 2020), Applied Optics (2019, 2020)

Conference Reviewer:

- CVPR (2022, 2023, 2024), ECCV (2020, 2022, 2024), ICCV (2021, 2023), ICLR (2023), NeurIPS (2023), EUSIPCO (2018, 2019)

PhD Application Evaluator:

- ELLIS: Fall 2021 (pre-screening)
- EPFL CS Doctoral Program (EDIC): Fall 2021, Spring 2022, Fall 2022, Fall 2023

Head Teaching Assistant:

- CS-503: Visual intelligence: machines and minds (Spring 2023, Spring 2024)

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, 2024.

SKILLS

<i>Languages</i>	Turkish (mother tongue) English (advanced) French (A2) German (A1)
<i>Computer</i>	Python, PyTorch, JAX, MATLAB, C, C++, LaTeX, Linux, Bash, Javascript