

ONUR BEKER

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EDUCATION

Swiss Federal Institute of Technology (EPFL)

PhD in Computer Vision and Machine Learning

Advisor: Amir Zamir

2021 - now

Lausanne, Switzerland

Swiss Federal Institute of Technology (EPFL)

EDIC Fellowship Program, School of Computer and Communication Sciences

2020 - 2021

Lausanne, Switzerland

Bogazici University

BSc in Electrical and Electronics Engineering

Thesis: Multi-Object Tracking with Kalman Filtering

Advisor: Bulent Sankur

2015 - 2020

Istanbul, Turkey

Tsukuba University

Short-term Visiting Student (Gap Year)

2017 - 2018

Tsukuba, Japan

PAST PROJECTS

Swiss Federal Institute of Technology (EPFL)

Project Student at VILAB, advised by Amir Zamir

2020 - 2021

Lausanne, Switzerland

- Trained reinforcement learning agents to solve image-based active tasks (e.g., navigation, manipulation).
- Studied the transfer learning performance of resulting perceptual encoders for downstream computer vision tasks (e.g., depth, semantic segmentation).

Swiss Federal Institute of Technology (EPFL)

Project Student at CVLAB, advised by Pascal Fua

2020 - 2021

Lausanne, Switzerland

- Worked on Neural Radiance Fields (NERF) to develop a relightable implicit scene representation that disentangles 3D geometry, color, and reflectance in an unsupervised way.

Harvard-MIT Health Sciences & Technology / MGH,

Athinoula A. Martinos Center for Biomedical Imaging

Research Intern, advised by Berkin Bilgic

2019 - 2020

Boston, USA

- Worked on parallel imaging for MRI, to develop a learning-based artifact reduction method that estimates the residual between undersampled physics-based reconstructions and ground truth fully sampled acquisitions.

Max Planck Institute for Intelligent Systems

Research Intern, advised by Metin Sitti

Summer 2018

Stuttgart, Germany

- Worked on developing a method for the self-assembly and actuation of microrobots, based on controlling dielectrophoretic forces through altering local surface geometry.

PUBLICATIONS

- Onur Beker, Mohammad Mohammadi, Amir Zamir. “PALMER: perception-action loop with memory for long-horizon planning”. NeurIPS, 2022.
- Yamin Arefeen, Onur Beker, Jaejin Cho, Heng Yu, Elfar Adalsteinsson, Berkin Bilgic. “Scan-specific artifact reduction in k-space (SPARK) neural networks synergize with physics-based reconstruction to accelerate MRI”. Magnetic Resonance in Medicine, 2022.
- Onur Beker, Congyu Liao, Jaejin Cho, Zijing Zhang, Kawin Setsompop, and Berkin Bilgic. “Scan-specific, parameter-free artifact reduction in k-space (SPARK)”. ISMRM, 2020.

- Jaejin Cho, Congyu Liao, Zijing Zhang, Wei-Ching Lo, Jinmin Xu, Onur Beker, Kawin Setsompop, and Berkin Bilgic. “Highly accelerated EPI with wave encoding and multi-shot simultaneous multislice imaging”. ISMRM, 2020.
- Yunus Alapan, Berk Yigit, Onur Beker, Ahmet F. Demirörs, Metin Sitti. “Shape-encoded programmable dynamic assembly of mobile micromachines”. Nature Materials, 2019.

HONORS & AWARDS

EPFL EDIC Fellowship	2020 – 2021
Awarded by EPFL School of Computer and Communication Sciences. Covers living expenses for a year.	
JASSO Scholarship for Short Term Study in Japan	2017 – 2018
Awarded by the Japanese Ministry of Education, Culture, Sports, Science and Technology. Covers living expenses for a year.	
BUMED Extensive Success Scholarship	2015 – 2020
Awarded by Bogazici University. Covers living expenses for the duration of undergraduate studies.	
Merit Based Prime Ministry Scholarship for Higher Education	2015 – 2020
Awarded by the Turkish Government. Covers living expenses for the duration of undergraduate studies.	

TEACHING

Teaching Assistant, EPFL	2022
CS-119: Information, Computation, and Communication	
Teaching Assistant, EPFL	2021
CS-503: Visual Intelligence: Machines and Minds	
Teaching Assistant, EPFL	2021
MATH-106: Analysis II	

SKILLS

Languages: Python, C/C++, MATLAB
 Frameworks: NumPy/SciPy, Pytorch, Tensorflow, OpenCV
 Design/Simulation Software: Solidworks, COMSOL, PSpice, XILINX
 Other: Linux, Bash Scripting, Git, Docker

LANGUAGES

Turkish: Native
 English: Professional (TOEFL IBT score: 112/120, GRE Verbal Score: 163/170)