

SEMIH BARUTCU

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PROFILE

Ph.D. candidate at Northwestern University with a focus in algorithm development for inverse problems, deep learning, and computer vision. Seeking graduate internship opportunities in artificial intelligence, data science and image processing fields.

EDUCATION

Ph.D. Electrical Engineering and Computer Science

Northwestern University, Class of 2022, GPA=3.98/4.00
(Katsaggelos Image & Video Processing Lab)

B.Sc. Electrical Engineering, *summa cum laude*

Bogazici University Istanbul, Class of 2017, GPA=3.80/4.00
(Minor in Business Administration and Management)

M.Sc. Electrical Engineering and Computer Science

Northwestern University, Class of 2018, GPA=3.98/4.00

(Full Scholarship) Exchange in Electrical & Computer Eng.

University of Texas at Austin, Class of 2017, GPA=3.84/4.00

TECHNICAL SKILLS

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|----------|--------------|---------|---------|---------------------|---------------|
| • Python | • PyTorch | • Keras | • C/C++ | • Scikit-learn | • Pandas |
| • MATLAB | • TensorFlow | • Java | • OOP | • Electronic Design | • Numpy/Scipy |

EXPERIENCE

Image Processing Research Assistant

Northwestern University – Katsaggelos' Image and Video Processing Laboratory

Sept 2017 – Present

Evanston, IL

- Developing techniques for computational microscopic imaging methods, combining Fourier ptychography and computational tomography.
- Researching machine learning solutions to problems in image / video analysis and processing

Computational Science Intern

Argonne National Laboratory – The Advanced Photon Source

June – August 2018

Lemont, IL

- Developing and implementing an iterative algorithm on direct coupling of computational tomography and Fourier ptychography

Mobile Application Developer

Valensas Mobile Technologies

March – Sept 2017

Istanbul, TR

- Developing Android applications for multiple banks and companies

R&D Engineering Intern

Mercedes – Benz Turk

August – Sept 2016

Istanbul, TR

- Simulating and testing effects of electrical motor on vehicle performance

Software Engineering Intern

Aselsan Defense Industry Inc

June – July 2016

Ankara, TR

- Application virtualization for computer programs specific to the industry

Digital Design Engineering Intern

Meteksan Defense Industry Inc

June – July 2015

Ankara, TR

- Designing a PCB to be used as a Video DAC and driving it using HDL

PUBLICATIONS

- **S. Barutcu**, S. Prasan, P. Ruiz, O. Cossairt, A. Katsaggelos. (2020). “Automatic Differentiation for 3D Ptychographic Reconstruction”. *International Conference on Image Processing (ICIP)*. In preparation.
- **S. Barutcu**, D. Gursoy, O. Cossairt, A. Katsaggelos. (2019). “Solving Ptychography and Tomography Problems in a Single Step”. *Optics Letters*. In preparation.
- **S. Barutcu**, L. Arslan. “Topic Classification Using Bidirectional LSTM Neural Networks.” *Bogazici University Undergraduate Thesis*. Print.