# Semih Barutcu

linkedin.com/in/semih-barutcu         +1 (847) 910 02ss64         SemihBarutcu@u.northwestern.edu

## 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

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

## WORK / RESEARCH EXPERIENCE

**Image Processing Research Assistant**                                           *Sept 2017 – Present*
*Northwestern University – Katsaggelos' Image and Video Processing Laboratory*                  *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**                                                  *June – August 2018*
*Argonne National Laboratory – The Advanced Photon Source*                                  *Lemont, IL*
- Developing and implementing an iterative algorithm on direct coupling of computational tomography and Fourier ptychography

**Mobile Application Developer**                                                  *March – Sept 2017*
*Valensas Mobile Technologies*                                                  *Istanbul, TR*
- Developing Android applications for multiple banks and companies

**R&D Engineering Intern**                                                  *August – Sept 2016*
*Mercedes – Benz Turk*                                                  *Istanbul, TR*
- Simulating and testing effects of electrical motor on vehicle performance

**Software Engineering Intern**                                                  *June – July 2016*
*Mercedes – Benz Turk*                                                  *Ankara, TR*
- Application virtualization for computer programs specific to the industry

**Digital Design Engineering Intern**                                                  *June – July 2015*
*Mercedes – Benz Turk*                                                  *Ankara, TR*
- Designing a PCB to be used as a Video DAC and driving it using HDL

## PUBLICATIONS / WRITTEN WORK

- **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.