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| **SEMIH BARUTCU** | | | | | | | | | |
| sbarutcu.github.io | | semihbarutcu@u.northwestern.edu | | | | +1 (847) 910 0264 | | | |
| **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 | | * Keras | | * C/C++ | * Scikit-learn | | | * Pandas |
| * MATLAB | * TensorFlow | | * Java | | * OOP | * Electronic Design | | | * Numpy/Scipy |
| **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 ptychography   and computational tomography.   * Building neural networks for detection of Covid-19 and Cardiac Amyloidosis from chest x-rays. * Exploring machine learning solutions to problems in computer vision and biomedical imaging | | | | | | | | | |
| **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 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* | | |
| *Aselsan Defense Industry Inc* | | | | | |  | *Ankara, TR* | | |
| * Application virtualization for computer programs specific to the industry | | | | | | | | | |
| **Digital Design Engineering Intern** | | | | | |  | *June – July 2015* | | |
| *Meteksan Defense Industry Inc* | | | | | |  | *Ankara, TR* | | |
| * Designing a PCB to be used as a Video DAC and driving it using HDL | | | | | | | | | |
| **SELECTED PUBLICATIONS** | | | | | | | | | |
| * **S. Barutcu**, P. Ruiz, F. Schiffers, S. Aslan, D. Gursoy, O. Cossairt, A. Katsaggelos. (2020). “Solving 3D Ptychographic Reconstruction Problem by Combining 2D Ptychographic and Tomographic Gradients”. *International Conference on Image Processing (In Review)*. * P. Shedligeri, **S. Barutcu,** P. Ruiz, F, Schiffers, A. Katsaggelos, O. Cossairt. (2020). “Effects of Regularization on Automatic Differentiation Ptychography.” *German Conference on Pattern Recognition (In Review)*. * **S. Barutcu**, L. Arslan. (2017). “Topic Classification Using Bidirectional LSTM Neural Networks.” *Bogazici University Undergraduate Thesis*. Print. | | | | | | | | | |