**Faculty Profile: George Nehmetallah**

Associate Professor

Department: Electrical Engineering and Computer Science

School: School of Engineering

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Education: Ph.D., Electrical Engineering, University of Dayton, 2006

**Research Interests and Expertise:**

* Machine learning applied to microscopy (Fluorescence, phase contrast, holographic, etc..)
* Computational imaging
* Non-intrusive surface measurement using digital holographic interferometry and microscopy
* Fourier ptychography
* 3D imaging and optical diffraction tomography
* Machine learning applied to optical communication systems

**Biography:**

Dr. George Nehmetallah is currently Associate Professor in the EECS department at CUA. From 2011-2012, he was at the University of Dayton (UD) as a Research Professor. Prior to this, he was a post-Doctoral Researcher and Research Engineer with UD. He has been funded by NSF, NASA, Air Force, Army, and DARPA and was one of the 11 out of over 500 that received the Army SBIR Achievement award in 2011. His research interests are in 3D imaging, computational imaging using machine learning, interferometry, diffraction tomography, and holographic and ptychographic microscopy. He has authored a book on Analog and Digital holography with MATLAB® and published more than 150 refereed journal papers, review articles and conference proceedings. He is a senior member of OSA and SPIE.

**Five Selected Papers:**

1. T. Nguyen, Y. Xue, Y. Li, L. Tian, and G. Nehmetallah, “A deep learning approach for Fourier ptychography microscopy,” Optics Express, 26(20), 26470-26484 (2018).
2. T. Nguyen, V. Bui, and G. Nehmetallah, “Computational Optical Tomography Using 3D Deep Convolutional Neural Networks (DCNNs),” Opt. Eng. 57(4), 043111 (April 2018).
3. V. K. Lam, T.C. Nguyen, B. M. Chung, G. Nehmetallah, and C. B. Raub, “Quantitative assessment of cancer cell morphology and movement using telecentric digital holographic microscopy and machine learning,” Cytometry A, 93(3) 334-345 (2018).
4. T. Dilazaro and G. Nehmetallah, “Large volume, low cost remote precision FMCW tomography using stitching DFBs,” Optic Express, 26(3), 2891-2904 (2018).
5. G. Nehmetallah and P. Banerjee, “Applications of digital and analog holography in 3D imaging,” Adv. Opt. & Photon., **4**(4): 472–553 (2012).

**Professional Activities (please also include STEM education/diversity/outreach activities)**

(i) Conference committee member:

* OSA Digital holography & 3-D Imaging, 2015-2023.
* SPIE DSS: Dimensional Opt. Metro. & Inspection for Pract. Appl. 2015-2023.

(ii) Guest Editor: For The joint feature issue in AO & JOSAB, JOSAB, **34**(5), DH1-4, May 2017.

(iii) Selected Honors and awards:

* The 2011 Army Achievement Awards with DMS Technology: High-Speed Non-Intrusive Measurement Techniques for the Visualization of Droplet Clouds (PI).
* Elected to the grade of Senior Member of: SPIE (2015) and OSA (2016).

(iv) Career-Related Extracurricular Activities: Created and supervised the SPIE and OSA student chapters at CUA 2016.