**Faculty Profile: Matthew Jacobs**

Clinical Assistant Professor of Computer Science

Department: Electrical Engineering and Computer Science

School: School of Engineering

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Education: Ph.D., Computer Science, The Catholic University of America, 2017

**Research Interests and Expertise:**

Computer Vision (specifically, Medical Image Processing and Astronomical Image Processing), Machine Learning, Pattern Recognition, Image Processing, and Computer Security.

**Biography:**

Matthew Jacobs joined The Catholic University of America (CUA) faculty in 2019, where he is currently a Clinical Assistant Professor of Computer Science in the Department of Electrical Engineering and Computer Science of the School of Engineering. He received his B.S., M.S., and Ph.D. degrees in computer science from CUA in 2010, 2012, and 2018, respectively. From 2018‐2019, he completed a post‐doctoral position at the Advanced Cardiovascular Imaging Laboratory within the National Heart, Lung and Blood Institute, National Institute of Health and CUA. This research has yielded more than 10 publications in leading journals and conferences, and one US Patent application.

**Five Selected Papers:**

1. M. Jacobs, M. Benovoy, L. C. Chang, A. E. Arai, and L. Hsu, “Evaluation of an automated method for arterial input function detection for first-pass myocardial perfusion cardiovascular magnetic resonance,” *Journal of Cardiovascular Magnetic Resonance: Official Journal of the Society for Cardiovascular Magnetic Resonance*, 2016;18:17. doi:10.1186/s12968-016-0239-0.
2. M. Jacobs, L. C. Chang, A. Pulkkinen, M. Romano, “Automatic analysis of double coronal mass ejections from coronagraph images,” *Space Weather.* 2015; 13:11 pp.761-777. DOI: 10.1002/2015SW001260.
3. M. Jacobs, “Advanced Image Processing in Cardiac Magnetic Resonance Imaging with Application in Myocardial Perfusion Quantification” PhD diss., The Catholic University of America; 2017, ProQuest.
4. L. Hsu, M. Jacobs, M. Benovoy, A.D. Ta, H. M. Conn, S. Winkler, A. M. Greve, M. Y. Chen, S. M. Shanbhag, W. P. Bandettini and A. E. Arai, “Diagnostic Performance of Fully Automated Pixel-Wise Quantitative Myocardial Perfusion Imaging by Cardiovascular Magnetic Resonance,” *JACC: Cardiovascular Imaging*. 2018; 11:5 pp.697-707. DOI: 10.1016/j.jcmg.2018.01.005
5. V. Bui, S. Shanbhag, O. Levine, M. Jacobs, P. Bandettini, L. Chang, M. Y. Chen, L. Hsu, "Simultaneous Multi-Structure Segmentation of the Heart and Peripheral Tissues in Contrast Enhanced Cardiac Computed Tomography Angiography” in *IEEE Access*, vol. 8, pp. 16187-16202, 2020, doi: 10.1109/ACCESS.2020.2966985.

**Professional Activities**

* Reviewer, IEEE Access, 2019-present.
* Research assistant/Postdoctoral Researcher at The National Institute of Health – National Heart, Lung, and Blood Institute: 2013-2019.
* Research assistant at CUA in partnership with NASA Goddard Space Flight Center: 2010-2011.