**Faculty Profile: Lin-Ching Chang**

Associate Professor

Department: Electrical Engineering and Computer Science

School: School of Engineering

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Education: D.Sc, Computer Science (minor in Statistics), George Washington University, 1998

**Research Interests and Expertise:**

Machine learning, medical image processing and analysis, data analysis, computational neuroscience, diffusion MRI, algorithm design, software development

**Biography:**

Lin-Ching Chang joined the Catholic University of America (CUA) in 2007 where she currently is an associate professor in the Department of Electrical Engineering and Computer Science and the director of Data Analytics program. Prior to joining CUA, she was working at National Institutes of Health (NIH) on developing machine learning algorithms and computational methods for medical image processing and analysis. Prior to joining NIH, she worked at 3Com Corporation for four years as a senior software engineer where she gained extensive experience in software development. She initiated and led several commercial projects including an interactive voice response system, database migration, and wireless applications. Dr. Chang has published more than 90 peer-reviewed articles in scientific journals and conferences such as NeuroImage, Magnetic Resonance in Medicine, and IEEE Transaction on Medical Imaging. Her research has been supported by the National Institutes of Health, the National Science Foundation, and the Henry M. Jackson Foundation for the Advancement of Military Medicine, among other entities.

**Five Selected Papers:**

1. I Almubark, L-C Chang, K Shattuck, T Nguyen, R Turner, X Jiang (2020), A 5-min Cognitive Task With Deep Learning Accurately Detects Early Alzheimer's Disease, Frontiers in Aging Neuroscience, Volume 12, DOI: 10.3389/fnagi.2020.603179.
2. L Walker, L-C Chang, A Nayak, M O Irfanoglu, K N Botteron, J McCracken, R C McKinstry, M J Rivkin, D-J Wang, J Rumsey, C Pierpaoli (2016), the Brain Development Cooperative Group, The Diffusion Tensor Imaging (DTI) Component of The NIH MRI Study of Normal Brain Development (PedsDTI), NeuroImage, doi: 10.1016/j.neuroimage.2015.05.083.
3. L-C Chang, E El-Araby, V Dang, L Dao (2014), GPU Acceleration of Nonlinear Diffusion Tensor Estimation Using CUDA and MPI, Neurocomputing 135, pp.328–338, doi:10.1016/j.neucom.2013.12.035.
4. L-C Chang, L Walker L, C Pierpaoli (2012), Informed RESTORE: A Method for Robust Estimation of Diffusion Tensor from Low Redundancy Datasets in the Presence of Physiological Noise Artifacts, Magnetic Resonance in Medicine 68, pp.1654-1663.
5. L-C Chang, DK Jones, C Pierpaoli C (2005), RESTORE: Robust Estimation of Tensors by Outlier Rejection. Magnetic Resonance in Medicine 53, pp.1088-95.

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

* Program committee member: IEEE BIG Data conference, 2015-2021, International Conference on Neural Computation Theory and Application (NCTA), and International Joint Conference on Computational Intelligence (IJCCI), 2018-2021. IEEE Cloud Summit 2019.
* Panel reviewer (NIH): Biomedical Imaging Technology A Study Section (BMIT-A), 2018., Bioengineering Research Partnerships-U01 (SBIB-H55), 2017 and 2018, Bioinformatics Support for the National Institute of Environmental Health Sciences (NIEHS), NIH RFP ES2015058, 2016.
* Associate Editor of Frontiers in Artificial Intelligence, 2021-present.
* Journal reviewer, NeuroImage, International Journal of Biomedical Imaging, IEEE Transaction on Medical Imaging, IEEE Journal of Biomedical and Health Informatics, Artificial Intelligence in Medicine, Diagnostics, Tomography.