Dr. Ahmed Temtam

ACADEMIC QUALIFICATIONS

- Ph.D. Electrical and Computer Engineering, Old Dominion University, Norfolk, Virginia, USA, (2014).
- M.Sc. Personal, Mobile, and Satellite Communications, Bradford University, UK (2004).
- PGDip. Microelectronic Systems, University of Liverpool, UK (2002).

GRANTS AND CONTRACTS AWARDED

- Hampton Roads Biomedical Research Consortium (HRBRC): Collaboration Accelerator Fund (CAF) 2022-23, Grant Award Amount: $115,889
- The health informatics component conducted by Prof. Iftekharuddin and postdoctoral fellow Ahmed Temtam in Old Dominion University's Vision Lab. awarded a $2.6 million grant by the National Institutes of Health as part of NIH's Clinical and Translational Science Award (CTSA) for Virginia Commonwealth University.

RESEARCH INTERESTS

- Wireless Communications
- Signal and Image Processing
- Machine Learning and Artificial Intelligence
- Medical Image (MRI, fMRI) and Neuroimaging Analysis
- Spectrum Sensing
- Cognitive Radio Systems

PROFESSIONAL CHRONOLOGY

- 06/2018 – 3/2026, Postdoctoral Research Fellow, Old Dominion University Research Foundation, Norfolk, Virginia, USA
- 01/2018 – 06/2018, Adjunct Faculty, ECPI University, Virginia USA
- 01/2012 – 06/2014 Graduate Assistant, Old Dominion University, Virginia, USA
- 08/2004 – 04/2008, Faculty Western Mountain University, Nalut, Libya

SCHOLARLY ACTIVITIES COMPLETED

Selected Publications

- Witherow, Megan A., Michael L. Evans, Ahmed Temtam, Hamid R. Okhravi, and Khan M. Iftekharuddin. "Machine learning-enhanced non-amnestic Alzheimer's disease diagnosis from MRI and clinical features." arXiv preprint arXiv:2601.15530 (2026).
- Temtam, Ahmed, Megan A. Witherow, Liangsuo Ma, M. Shibly Sadique, F. Gerard Moeller, and Khan M. Iftekharuddin. "Functional brain network identification in opioid use disorder using machine learning analysis of resting-state fMRI BOLD signals." Computers in Biology and Medicine 196 (2025): 110946.
- Temtam, Ahmed, Megan A. Witherow, Liangsuo Ma, M. Shibly Sadique, F. Gerard Moeller, C. Kenneth, Dianne Wright, and Khan M. Iftekharuddin. "359 Differentiating opioid use disorder

from healthy controls via ML analysis of rs-fMRI networks." Journal of Clinical and Translational Science 9, no. s1 (2025): 110-111.

- Farzana, W., A. Temtam, B. Humud-Arboleda, L. Ma, M. Bean, F. Gerard Moeller, and K. M. Iftekharuddin. "Obesity prediction from structural MRI using conformal deep learning with uncertainty quantification." In Medical Imaging 2025: Computer-Aided Diagnosis, vol. 13407, pp. 718-727. SPIE, 2025.
- Rahman, Monibor, Muhammad Umair, Kwame Ampofo, Ahmed Temtam, and Khan M. Iftekharuddin. "3D digital twin reconstruction of street flooding." In Optics and Photonics for Information Processing XIX, vol. 13604, pp. 151-158. SPIE, 2025.
- Farzana, Walia, Megan A. Witherow, Ahmed Temtam, Liangsuo Ma, Melanie Bean, F. Gerry Moeller, and K. M. Iftekharuddin. "Key brain region identification in obesity prediction with structural MRI and probabilistic uncertainty aware model." (2025).
- Ampofo, K., Witherow, M., Glandon, A., Rahman, M., Temtam, A., Cetin, M., and Iftekharuddin, K.M. (2024). Automated flood depth estimation on roadways. Conf. Optics and Photonics for Information Processing XVIII.
- Sadique, M.S., Farzana, W., Temtam, A., Lappinen, E., Vossough, A., and Iftekharuddin, K.M. (2024). Brain Tumor Recurrence vs. Radiation Necrosis Classification and Patient Survivability Prediction. IEEE Journal of Biomedical and Health Informatics.
- Farzana, W., Temtam, A., and Iftekharuddin, K.M. (2024). Wavelet-based harmonization of local and global model shifts in federated learning for histopathological images. Proc. of SPIE Vol, 12930, 129300J–1.
- Abusoua, A., Temtam, A., Benyounis, K., and Tamtam, A. (2024). Development of laser fabrication methods for lab-on-a-chip microfluidic multisensing devices in the past decades.
- Farzana, W., Witherow, M., Longoria, I., Sadique, M., Temtam, A., and Iftekharuddin, K.M. (2024). Domain adaptive federated learning for multi-institution molecular mutation prediction and bias identification. Medical Imaging 2024: Computer-Aided Diagnosis, SPIE, 12927, 368–375.
- Temtam, A., and Popescu, D. (2023). Cognitive radio spectrum sensing using TDSC: Evaluating performance in WiMAX and LTE networks. American Journal of Telecommunications, 1(Issue 1), 2023.
- Tamtam, A., Benyounis, K., Temtam, A., and Abusoua, A. (2023). Advancements in network sensor optics via add-drop filter modification. Module in Materials Science and Materials Engineering. https://doi.org/10.1016/B978-0-323-96020-5.00180-1.
- Temtam, A., Abusoua, A., Benyounis, K., and Tamtam, A. (2023). Machine learning in metal forming processes. Elsevier.
- Temtam, A., Abusoua, A., Benyounis, K., and Tamtam, A. (2023). Use of neural networks and artificial intelligence tools for modeling, characterization, and predicting in material engineering.
- Temtam, A., Abusoua, A., Benyounis, K., and Tamtam, A. (2023). New developments in wireless sensor networks: From real world to system integration. Alternative hardware approaches.
- Temtam, A., Sadique, M.S., Ma, L., Moeller, G., and Iftekharuddin, K.M. (2023). Opioid use disorder prediction using machine learning of fMRI data. Medical Imaging 2023: ComputerAided Diagnosis, SPIE, Paper 12465-24.
- A. Temtam Sadique, M.S., Rahman, M.M., Farzana, W.,and Iftekharuddin, K.M., 2023, “Pediatric Brain Tumor Segmentation using Multiresolution Fractal Deep Neural Network”, MICCAI 2023 Challenge.
- Sadique, M.S., A. Temtam, Rahman, M.M., Farzana, W.,and Iftekharuddin, K.M., 2023, “Local Synthesis of Healthy Brain Tissue Using an Enhanced 3D Pix2Pix Model for Medical Image Inpainting”, MICCAI 2023 Challenge.

- Sadique, M.S., A. Temtam, Rahman, M.M., Farzana, W.,and Iftekharuddin, K.M., 2023, “Brain Tumor Segmentation: Glioma Segmentation in Sub-Saharan Africa Patients Using nnU-Net”, MICCAI 2023 Challenge.
- Sadique, M.S., Temtam, A., Farzana, W., and Iftekharuddin, K.M. (2023). Class activation mapping and uncertainty estimation in multi-organ segmentation. Medical Imaging 2023: Computer-Aided Diagnosis, SPIE, Paper 12465-28.
- Sadique, M.S., Rahman, M.M., Temtam, A., Farzana, W., and Iftekharuddin, K.M. (2023). Brain Tumor Segmentation using Neural Ordinary Differential Equations with UNet-Context Encoding Network. MICCAI 2022 Challenge.
- Rahman, M.M., Sadique, M.S., Temtam, A., Farzana, W., Vidyaratne, L., and Iftekharuddin, K.M. (2022). Brain Tumor Segmentation Using UNet-Context Encoding Network. Brainlesion: Glioma, Multiple Sclerosis, Stroke, and Traumatic Brain Injuries: MICCAI 2021 Workshop.
- Farzana, W., Temtam, A., Shboul, Z.A., Rahman, M.M., Sadique, M.S., and Iftekharuddin, K.M. (2022). Radiogenomic Prediction of MGMT Using Deep Learning with Bayesian Optimized Hyperparameters. MICCAI BrainLes 2021 Workshop.
- Sadique, M.S., Temtam, A., Lappinen, E., and Iftekharuddin, K.M. (2022). Radiomic texture feature descriptor to distinguish recurrent brain tumor from radiation necrosis using multimodal MRI. Medical Imaging 2022: Computer-Aided Diagnosis, SPIE.
- Farzana, W., Shboul, Z.A., Temtam, A., and Iftekharuddin, K.M. (2022). Uncertainty estimation in classification of MGMT using radiogenomics for glioblastoma patients. Medical Imaging 2022: Computer-Aided Diagnosis, SPIE.
- Temtam, A., Erica J Cruz, Okhravi, H., Strock, D., Sternick, M., and Iftekharuddin, K.M. (2022). Advanced Machine Learning Approach to Increase Diagnostic Accuracy in Atypical Alzheimer’s Disease Cases. Alzheimer’s Association International Conference (AAIC).
- Temtam, A., and Popescu, D. (2019). Performance Analysis of Spectrum Sensing Employing Pilot Tones. Elsevier.
- Temtam, A., Popescu, D.C., and Popescu, O. (2014). Using OFDM pilot tone information to detect active 4G LTE transmissions. IEEE 10th International Conference on Communications (COMM), pp. 1-4.
- Temtam, A., and Popescu, D.C. (2014). Using OFDM pilot tones for spectrum sensing with applications to mobile WiMAX. IEEE Radio and Wireless Symposium (RWS), pp. 232-234.

Book Chapters

- Machine Learning in Metal Forming Processes, Elsevier, 2023.
- Neural Networks for Modeling in Materials Engineering, Elsevier, 2023.
- New developments in Wireless Sensor Networks: From Real World to System Integration. Alternative Hardware Approaches. Pages, 216-228 -– Elsevier. 2023
- Analysis of Spectrum Sensing Employing Pilot Tones.", Elsevier (2019).