Mohammad Iqbal Nouyed, PhD

LinkedIn | Google Scholar | ORCiD: 0000-0001-5314-6706 | +1 304-376-8193 | iqbalnaved@gmail.com

RESEARCH FOCUS

Clinical AI evaluation and safety in healthcare. Specializing in systematic benchmarking of large language models and multimodal foundation models across dermatology, psychiatry, ophthalmology, and computational pathology. Research addresses critical gaps in AI safety including chatbot sycophancy, prompt framing bias, text-dominant decision-making in multimodal models, and failure to detect psychiatric risk in patient-facing AI systems.

EDUCATION

West Virginia University
PhD in Computer Science — *Jan. 2020 – Dec. 2024*

West Virginia University
MS in Computer Science — *Jan. 2015 – Dec. 2019*

Independent University Bangladesh
MS in Computer Science — *Jan. 2010 – May 2012*

Independent University Bangladesh
BS in Computer Science — *Sep. 2000 – Jun. 2005*

RESEARCH AND PROFESSIONAL EXPERIENCE

Dept. of Microbiology, Immunology and Cell Biology, WVU — Morgantown, WV
Postdoctoral Research Fellow (PI: Gangqing Hu, PhD) — *July 2025 – Present*

- **AI safety in psychodermatology:** Developed a multi-agent patient-consultant-QC simulation framework to evaluate chatbot sycophancy in psychodermatological consultations. Demonstrated that general-purpose chatbots sense mental health distress but fail to refer users to appropriate providers, identifying a critical patient safety gap.
- **Prompt framing bias in dermoscopy:** Designed and executed large-scale experiments quantifying the effect of prompt framing (concerned vs. neutral vs. unconcerned) on LLM diagnostic accuracy for melanoma classification across GPT-5, Gemini, and MedGemma models.
- **Text-dominant reasoning in multimodal models:** Showed that large multimodal models default to text-based reasoning even when image inputs are diagnostically critical, revealing a fundamental failure mode in multimodal integration.
- **Multimodal foundation model evaluation:** Evaluated general-purpose vs. domain-specific foundation models on melanoma classification (dermoscopy) and diabetic retinopathy grading (retinal fundus) across zero-shot, few-shot, fine-tuning, and linear probing paradigms.
- **AI-generated clinical vignettes:** Collaborated on evaluating LLM-generated psychiatric vignettes for medical education, contributing to a publication in npj Digital Medicine (IF 15.1). Also contributed to evaluation of ChatGPT-generated dermatology vignettes from clinical images.
- **Hemangioma treatment classification:** Evaluated large language model zero-shot classification capabilities for hemangioma treatment decisions from skin-lesion images (collaborators: Prof. Zachary A. Zinn, MD; Sabrina Duran, Medical Resident).
- **Lung cancer images:** Fine-tuned pathology foundation models for mouse lung cancer classification from gigapixel whole-slide images (collaborator: Prof. Lori A. Hazlehurst, PhD).

Lane Dept. of CSEE, West Virginia University — Morgantown, WV
Lecturer (Part-time) — *Feb. 2025 – May 2025*

- **Digital Image Processing:** Taught EE465: Digital Image Processing at the undergraduate level. Designed syllabus, created lecture materials, and evaluated student coursework.

Social Media and Data Analytics Lab, WVU — Morgantown, WV
Graduate Research Assistant (Advisor: Donald A. Adjeroh, PhD) — *Jan. 2020 – Dec. 2024*

- **Doctoral dissertation:** Efficient classification of very high-resolution histopathology images.
- **Computational pathology:** Developed novel discriminative patch selection approaches for gigapixel whole-slide image classification. Addressed class imbalance through information-theoretic cluster-based sampling and ensemble decision fusion. Built model trustworthiness evaluation and novelty detection frameworks for histopathology.

- **Remote sensing image classification:** Developed a token-based framework for scene classification of remote-sensed aerial imagery.

Computer Vision Lab, WVU Morgantown, WV
Graduate Research Assistant *Jan. 2015 – Dec. 2019*

- **Biometric quality assessment:** Developed novel methods for face image quality assessment. One key method received approval for testing in a DHS environment. Led a team achieving top performance in IJCB 2017 and ECCV 2018 face detection challenges.

Purepredictive Inc. Salt Lake City, UT
Product Development Engineer *Feb. 2013 – Aug. 2014*

- **Predictive analytics:** Designed and developed an automated data cleaning component for a predictive analytics system pipeline.

Computer Vision and Cybernetics Research Group, IUB Dhaka, Bangladesh
Research and Teaching Assistant *Jan. 2010 – May 2012*

- **Masters thesis:** Discriminating Characteristics of Gabor Phase-Face and an Improved Face Recognition System.
- **Gabor wavelet face recognition:** Studied, developed, and implemented novel Gabor wavelet-based face recognition and authentication methods.

PEER REVIEWED PUBLICATIONS AND MANUSCRIPTS

Clinical AI Evaluation and Safety

- **M. I. Nouyed**, D. A. Adjeroh, D. Xu, M. S. Kolodney, and G. Hu, “The cost of AI sycophancy in dermoscopic diagnosis. Comment on “Framing Bias in a large language model: prompt framing influences ChatGPT’s accuracy in melanoma classification. A diagnostic accuracy study,” Journal of the American Academy of Dermatology, accepted.
- **M. I. Nouyed**, M. Al-Mamun, D. A. Adjeroh, and G. Hu, “Comparative Analysis of General-Purpose vs. Domain-Specific Multimodal Models for Diabetic Retinopathy Classification,” Diagnostics, vol. 16, no. 10, p. 1504, May 2026, doi: 10.3390/diagnostics16101504.
- **M. I. Nouyed**, L. E. Keplinger, E. Shue, A. E. Smith, D. N. Chandran, D. E. Elswick, M. S. Kolodney, W. Zheng, and G. Hu, “Sensing but Not Alerting: The Cost of Sycophancy in ChatGPT Psychodermatology Consultations,” JAAD International, under review.
- **M. I. Nouyed**, L. E. Keplinger, H. Akhter, E. Shue, D. Adjeroh, M. S. Kolodney, and G. Hu, “Text-Dominant Decision-Making by Large Multimodal Models in Dermatology Clinical Challenges: Comment on ‘AI-Assisted Dermatologic Diagnosis Using a Large Language Model,’” Journal of the American Academy of Dermatology, accpted.
- W. Zheng, D. N. Chandran, D. E. Elswick, **M. I. Nouyed**, and G. Hu, “Evaluation of artificial intelligence-generated vignettes depicting patient chatbot use in psychiatric contexts,” npj Digital Medicine, Apr. 2026, doi: 10.1038/s41746-026-02605-6.
- H. Akhter, **M. I. Nouyed**, D. A. Adjeroh, and G. Hu, “Evolving performance of GPT models in dermoscopic diagnosis: Comment on “comparative assessment of GPT-4 vision in dermoscopic image analysis,”” Journal of the American Academy of Dermatology, vol. 94, no. 4, pp. e289–e290, Apr. 2026, doi: 10.1016/j.jaad.2025.09.119.
- L. E. Keplinger, H. Akhter, **M. I. Nouyed**, J. M. Ruppert, E. Ghareeb, C. Beatty, Z. Zinn, and G. Hu, “Evaluation of ChatGPT in Generating Dermatology Vignettes from Clinical Images,” Journal of the American Academy of Dermatology, pending submission.

Computational Pathology, Computer Vision, and Remote Sensing

- **M. I. Nouyed**, G. Doretto, and D. A. Adjeroh, “Patch-Based Tiny Object Classification for High Resolution Aerial Images,” IGARSS 2025, pp. 7293–7297, Aug. 2025, doi: 10.1109/igarss55030.2025.11243929.
- **M. I. Nouyed**, G. Doretto, and D. A. Adjeroh, “A Framework for Evaluating Model Trustworthiness in Classification of Very High Resolution Histopathology Images,” IEEE BIBM 2024, pp. 6929–6936, Dec. 2024, doi: 10.1109/bibm62325.2024.10822778.
- **M. I. Nouyed**, M.-A. Hartley, G. Doretto, and D. A. Adjeroh, “Efficient Classification of Histopathology Images Using Highly Imbalanced Data,” Pattern Recognition, pp. 160–175, Dec. 2024, doi: 10.1007/978-3-031-78166-7_11.
- **M. I. Nouyed**, G. Doretto, and D. A. Adjeroh, “A Framework for Token-Based Scene-Classification of Remote Sensing Images,” IGARSS 2023, pp. 6239–6242, Jul. 2023, doi: 10.1109/igarss52108.2023.10282874.

- **M. I. Nouyed**, G. Doretto, and D. A. Adjeroh, “Efficient Classification of Very High Resolution Histopathological Images,” IEEE BIBM 2022, pp. 3114–3121, Dec. 2022, doi: 10.1109/bibm55620.2022.9994942.

Biometric Quality Assessment and Face Recognition

- M. Gunther et al., “Unconstrained Face Detection and Open-Set Face Recognition Challenge,” IEEE IJCB 2017, pp. 697–706, Oct. 2017, doi: 10.1109/btas.2017.8272759.
- **I. Nouyed**, B. Poon, M. A. Amin, and H. Yan, “A study on the discriminating characteristics of Gabor phase-face and an improved method for face recognition,” International Journal of Machine Learning and Cybernetics, vol. 7, no. 6, pp. 1115–1130, Oct. 2015, doi: 10.1007/s13042-015-0440-8.
- **I. Nouyed** and M. A. Amin, “Recent Advancements in Gabor Wavelet-Based Face Recognition,” Encyclopedia of Information Science and Technology, Third Edition, pp. 262–274, Jul. 2014, doi: 10.4018/978-1-4666-5888-2.ch025.
- **I. Nouyed**, B. Poon, M. A. Amin, and H. Yan, “Facial authentication using Gabor phase feature representations,” Proc. IMECS, vol. 1, 2013, pp. 413–418.
- **I. Nouyed**, B. Poon, M. A. Amin, and H. Yan, “Human face recognition using weighted vote of Gabor magnitude filters,” Proc. ICITA, 2011, pp. 36–40.
- **I. Nouyed**, B. Poon, M. A. Amin, and H. Yan, “Face recognition accuracy of Gabor phase representations at different scales and orientations,” ICMLC 2011, pp. 1767–1772, Jul. 2011, doi: 10.1109/icmlc.2011.6017000.

SELECTED PRESENTATIONS

- **AAAI-SECURE4H: AAAI Fall 2025 Symposium on Safe, Ethical, Certified, Uncertainty-Aware, Robust, and Explainable AI for Health.** “Sensing Without Alerting: The People-Pleaser Cost of General-Purpose Chatbots in Dermatology Patients with Psychiatric Comorbidity.” (Oral: Nov 8, 2025, Westin Arlington Gateway, VA)
- **WVAR-CRESH: 2025 WVU Summer Workshop on AI, Digital Health & BioML.** “Using Multimodal LLMs for Studying Scientific Articles.” (Oral: July 23, 2025, WVU Alumni Center, WV)
- **WVAR-CRESH: 2024 Summer Workshops on AI & Digital Health, BioML, and BridgesDH NRT.** “Efficient Analysis of Gigapixel Histopathological Images.” (Oral: July 17, 2024, WVU AERB, WV)
- **IEEE IGARSS 2023, Pasadena, CA.** Poster: “A Framework for Token-Based Scene-Classification of Remote Sensing Images.” (July 16, 2023, Pasadena Convention Center)
- **IEEE BIBM 2022, Las Vegas, NV.** Workshop: “Efficient Classification of Very High Resolution Histopathological Images.” (Dec 6, 2022, Caesar’s Palace, Las Vegas NV)

TECHNICAL SKILLS

Languages: Python, MATLAB, C/C++

ML/DL frameworks: PyTorch, TensorFlow, Scikit-Learn, OpenCV, sk-image

Medical imaging: OpenSlide, CellProfiler, QuPath, DeepCell, HistomicsTK

LLM evaluation: OpenAI API, Google Gemini API, Hugging Face Inference

Data analysis: Pandas, NumPy, SciPy, Matplotlib, Seaborn, Excel

PEER REVIEW SERVICE

IET Biometrics (3), IEEE Access (3), IET Image Processing (11), International Journal of Machine Learning and Cybernetics, Springer (11)

AWARDS AND CERTIFICATIONS

Best Paper Award: “Facial Authentication Using Gabor Phase Feature Representations.” International Multiconference of Engineers and Computer Scientists, 2013.

Deep Learning Specialization: Completed the 5-course specialization on deep learning, DeepLearning.AI / Coursera (Feb. 2019).

Agentic AI: DeepLearning.AI (Jan. 2026).

MCP – Build Rich-Context AI Apps with Anthropic: Anthropic / DeepLearning.AI (Jan. 2026).

MENTORING

Summer 2023: Mentored a pre-college intern on problem solving using Python.

Fall 2024: Mentored an undergraduate lab intern on cellular data analysis libraries and cellular image pre-processing.

REFERENCES

Dr. Gangqing Hu Tenure Track Assistant Professor Dept. of Microbiology, Immunology, and Cell Biology WVU School of Medicine Email: michael.hu@hsc.wvu.edu Phone: 304-293-2649	**Dr. Donald A. Adjeroh** Professor, Assoc. Chair for Faculty Dev. & Research Lane Department of CSEE West Virginia University Email: donald.adjeroh@mail.wvu.edu Phone: 304-293-9681