

Prof. Dr. Amr Talaat Abdel-Hamid



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Amr T. Abdel-Hamid's research interests are as diverse as they are profound. In 2023, he expanded his academic horizons by joining the German International University in Berlin as an Associate Professor of Computer Architecture and serving as the Program Director for Information Engineering and Technology. His research encompasses a broad spectrum of topics, including hardware verification, where he explores the intricacies of ensuring the integrity and performance of computing systems. He delves into the realm of hardware security, a critical aspect in safeguarding technology against evolving threats.

Education

PhD. in Electrical and Computer Engineering, 2005

Concordia University, Montreal, Quebec, Canada.

MSc. in Electrical and Computer Engineering, 2001

Concordia University, Montreal, Quebec, Canada.

Research Interests

Amr's work in wearable devices intersects with his interest in the Internet-of-Things (IoT), focusing on the seamless integration of technology with daily life to enhance personal health and efficiency. His pioneering efforts in AIoT (Artificial Intelligence of Things) solutions demonstrate his commitment to pushing the boundaries of how artificial intelligence can be woven into the fabric of IoT to create smart, autonomous systems that are both innovative and practical. These research topics are not just academic pursuits for Amr; they are pathways to developing tangible, cutting-edge technologies that transform revolutionary ideas into everyday realities.

Selected Research

- O. Mahmoud, H. Kopp, A. T. Abdelhamid, and F. Kargl, "Applications of smart-contracts: anonymous decentralized insurances with IoT sensors," in *Proceedings of the IEEE International Conference on Internet of Things (iThings) and IEEE Green Computing and Communications (GreenCom) IEEE Cyber, Physical and Social*

Computing (CPSCoM) IEEE Smart Data (SmartData), pp. 1507–1512, Halifax, Nova Scotia, Canada, July 2018.

- M. M. Farag, M. Fouad and A. T. Abdel-Hamid, "Automatic Severity Classification of Diabetic Retinopathy Based on DenseNet and Convolutional Block Attention Module," in *IEEE Access*, vol. 10, pp. 38299-38308, 2022, doi: 10.1109/ACCESS.2022.3165193.
- M. A. Fouad and A. T. Abdel-Hamid, "On Detecting IoT Power Signature Anomalies using Hidden Markov Model (HMM)," *2019 31st International Conference on Microelectronics (ICM)*, Cairo, Egypt, 2019, pp. 108-112, doi: 10.1109/ICM48031.2019.9021483.
- A. Cui, C. -H. Chang, S. Tahar and A. T. Abdel-Hamid, "A Robust FSM Watermarking Scheme for IP Protection of Sequential Circuit Design," in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol. 30, no. 5, pp. 678-690, May 2011, doi: 10.1109/TCAD.2010.2098131.
- Abdel-Hamid, A.T., Tahar, S. & Aboulhamid, E.M. A Survey on IP Watermarking Techniques. *Des Autom Embed Syst* 9, 211–227 (2004). <https://doi.org/10.1007/s10617-005-1395-x>
- B. Akbarpour, A. T. Abdel-Hamid, S. Tahar and J. Harrison, "Verifying a Synthesized Implementation of IEEE-754 Floating-Point Exponential Function using HOL," in *The Computer Journal*, vol. 53, no. 4, pp. 465-488, May 2010, doi: 10.1093/comjnl/bxp023.