Amr T. Abdel-Hamid, M.Sc., PhD., IEEE S.M.

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EXECUTIVE SUMMARY

- **Associate Prof. of Computer Architecture,** Information and Electronics Technology (IET)**, German International University, Berlin, Germany.**
- **Associate Professor,** Electronics/Networks Departments**, German University in Cairo (GUC).**
- **Program Director,** Information and Electronics Technology (IET), **German International University, Berlin, Germany.**
- **Vice Dean of Student Affairs (Term ended at Feb. 2023),** Information and Electronics Technology (IET), **German University in Cairo (GUC), Cairo, Egypt.**
- Established and Headed **GIU Berlin IoT Prototyping Lab** & **GUC Cairo IoT Lab**
- Headed and facilitated **GIU Cyber-physical and Robotics lab Usage**

- **Founder and Managing Director** of Smart Solutions for Technology Management **(SSTM Egypt),** Cairo, Egypt.
- **SSTM was Awarded as Best Digital Solutions Provider 2023 – Egypt**, African Excellence Awards 2023 (IOT Section)
- Co-Founder and CTO of Innova Integrated Automation Solutions, Cairo, Egypt.
- Contributed to the development of a wide array of IoT and AI solutions across industrial and academic sectors.

- **M. Sc and Ph.D. in** Computer Engineering**, Concordia University, Montreal, Quebec, Canada. (**2001, 2005**)**
- **Information Technology Institute (ITI) Graduate Diploma in Network Programming (**1998**).**
- **IEEE Senior Member** since 2014.

- **Main Research Interests**
  - Internet of Things
  - IOT Security & Applications.
  - Digitalization & Digital Twinning
  - IP Watermarking
  - System-on-A-Chip Design and Verification
  - Functional Verification Techniques, Tools, and Languages.
  - Security Protocols Verification
- **Publications (38+ refereed publications)**
- **Student Supervision**
  - 300+ Undergraduate Students' Project Supervised
  - 16 Master Students Supervised
  - 3 PhD Students Supervised

ACADEMIC, SCHOLARLY, AND INDUSTRIAL EXPERIENCE

Mar. 2023-Present **Associate Prof. of Computer Architecture, Program Director**
Information and Electronics Technology (IET), German International University, Berlin, Germany

- Prepared and taught different the Undergraduate and Graduate Level courses in Networks Engineering, Computer Engineering and Electronics.
- Established and Headed **GIU IoT Lab** (lab Details described below).
- Headed and facilitated **GIU Cyber-physical and Robotics lab Usage** (lab Details described below).

- Participated and Achieved accreditation of IET, EMS (Engineering and material science) and MET (Media Engineering and Technology) programs according to **ACQUIN program accreditation** as well as the German Official **accreditation** System.

Feb .2017-Feb. 2023 **Vice Dean of Student Affairs,**
Information and Electronics Technology (IET), German University in Cairo (GUC), Cairo, Egypt.

- Participated and Achieved Dual accreditation of IET programs. Our IET Programs were accredited unconditionally by **ACQUIN program accreditation until 2024** as well as getting the **Egyptian Governmental accreditation**.
- Head of Probation Committee, Information & Engineering Technology (IET).
- Head of Student Advising Committee Director, Information & Engineering Technology (IET).
- Head of Graduation Committee, Information & Engineering Technology (IET).
    - Responsible for managing and controlling the process of confirming academic eligibility of graduating IET students
    - Responsible for managing and controlling the process of courses equivalency between different GUC courses
    - Responsible for managing and controlling the process of course equivalency between advanced transfer courses from partner German universities and GUC courses
- Improving and streamlining current operations (including solving different issues) To ensure the enforcement of the University policies, KPIs, and regulations.
- Planning and implementation of the training and development of staff
- Planning the promotion of Continuing Education (Training courses): we established agreements with three international entities to ensure that our training sessions are internationally approved. Adopt and implement industrial certification tracks, such as **Cisco, VMWare, Juniper, RedHat Certification. Also.** we established as very close relations with **mentronics** (Siemens Hardware CAD Design Training representative). This portfolio is the corner stone in providing up to date internationally recognized programs.
- Establishment Effective students' Interaction Channels:
    - Established and Counselled IEEE GUC Student Chapter
    - join different Student activities such as TCM (Theatre Group), Music Ensemble and IEEE.
    - Initiated Facebook and Instagram pages for GUC Alumni allowing them to be more connected to our students. These pages had initiated a very healthy discussion about our university and allowed us to connect to our students and our graduates effectively.
- Establishment of an **Internship Program** for our Faculty students with the help of university bodies. We initiated an internship program throughout the faculty, especially for student at their early training stages (4th and 6th semesters). This allows us to move faster in research and train more students. This was done using our industrial, research and Alumni relations to make sure that even young student gets early proper training.

The whole program was moved online during the Covid-19 period and proved its effectiveness because of lack of internships at this period.

2017-Present **Associate Professor, Electronics/Networks Departments (Duel Appointed), Information and Electronics Technology (IET), German University in Cairo (GUC), Cairo, Egypt.**

- Prepared and Taught Over 20 Courses at the Undergraduate and Graduate Levels (***Courses Details are attached in the Teaching Profile***)
- Supervised over 300 students' projects in both networks, Computer Engineering and Electronics in the past 16 years.
- Supervised over 18 Masters, and 3 PHD Students.
- **Established and Headed GUC IOT-Prototyping Lab** including ability to build different IOT projects, with different communication modules (including LORA, BLE, WIFI) and analyze their power abilities.
- **Diverse IoT Project Development**: build a wide range of IoT projects within the lab demonstrates a comprehensive approach to IoT education, emphasizing practical skills alongside theoretical knowledge. Highlighting the variety of projects, especially in wearable devices, smart city solutions, and health and sport monitoring solutions, shows the lab's versatility and your adeptness at applying IoT technologies across different sectors.
- **Power Analysis Capabilities**: The lab's focus on analyzing power abilities of IoT modules underlines the importance of energy efficiency in IoT devices. This attention to power consumption is crucial for developing sustainable, long-lasting IoT solutions, especially in wearable and portable devices.
- **Prototyping and Testing of IoT Modules**: The lab's achievement in prototyping and testing over 60 different IoT modules in the past 3 years highlights its role as a prolific center for IoT development.
- **PCB Design and Production**: Including PCB design and production in the lab's capabilities illustrates your comprehensive approach to IoT prototyping, from concept to physical realization. This skill is essential for the end-to-end development of IoT devices, ensuring that students and researchers can bring their innovative ideas to life.

2006-2017 **Assistant Professor, Electronics/Networks Departments (Duel Appointed),** Information and Electronics Technology (IET), **German University in Cairo (GUC),** Cairo, Egypt.

2016-Now **Founder & Managing Director, SSTM Egypt, IOT Smart Solutions** Cairo, Egypt.

- **Strategic Leadership:** Led the development and execution of a comprehensive technology strategy, ensuring alignment with the company's mission and market demands. Drove the company's growth by focusing on innovative IoT solutions and smart technologies.
- **Research and Development Oversight:** Directed the research, development, and deployment phases of cutting-edge IoT projects, from conception through finalization. Played a pivotal role in overseeing special projects that positioned SSTM Egypt as a leader in the IoT industry.
- **Project Management and Quality Control:** Maintained strict oversight of technical aspects across all projects, ensuring adherence to high-quality

standards while controlling costs. Implemented rigorous project analysis techniques to optimize performance and efficiency.

- **Technical Representation**: Acted as the primary liaison for the organization in technical meetings, articulating the company's vision and technical capabilities to partners, stakeholders, and industry forums.
- **Technology Road mapping**: Developed and executed forward-looking technology roadmaps, incorporating the latest advancements in IoT and smart solutions. Ensured the company's continuous innovation and competitive edge in the market.
- **Product Development Leadership**: Led the SSTM design team in the development and launch of several innovative IoT products, overseeing the prototyping of M2M Service Capability Middleware and Applications. This resulted in the successful market introduction of cutting-edge solutions that met diverse customer needs.
- **Industry Engagement:** Kept abreast of technological advancements and industry trends to ensure SSTM Egypt's offerings remained at the forefront of innovation. Fostered a culture of continuous learning and adaptation within the team.

2010-2016 **CTO and Co-Founder, Innova Egypt, Integrated Wireless Automation Solutions,**
Cairo, Egypt.

- Led Innova design team through the development and finalization of the following products:
  - Vodafone Panic Button Design, first Egyptian Wearable Device.
  - Masria **iTemp**, Wireless temperature Monitoring solution for Hotels, Restaurants and Cold Fleets.
  - **iWish 1, & iWish 2**: A smart home wireless Integrated solution. (including Software/Hardware components)

2005-2006 **Tenure Track Assistant Professor,**
Electrical and Computer Engineering Department, Leonard C. Nelson College of Engineering,
West Virginia University Institute of Technology, Charleston, West Virginia, USA.

1999-2005 **Research Assistant,**
Electrical and Computer Engineering Department, **Hardware Verification Group (HVG),**
Concordia University, Montreal, Quebec, Canada

2000-2005 **Teaching Assistant,**
Electrical and Computer Engineering Department,
Concordia University, Montreal, Quebec, Canada

1998- 1999 **Senior Networking Technical Support Engineer,**
Alkan Communications, Cairo, Egypt

EDUCATION

2001-2005 **PhD. in Electrical and Computer Engineering,**
Concordia University, Montreal, Quebec, Canada.

1999-2001 **MSc. in Electrical and Computer Engineering,**
Concordia University, Montreal, Quebec, Canada.

1997-1998 **Network Programming Diploma**,
Information Technology Institute (ITI), Cairo, Egypt.

1992-1997 **B. Eng. Electronics & Communication Engineering**,
Cairo University, Cairo, Egypt.

INDUSTRIAL ACHIEVEMENTS AND CONTRIBUTIONS

- **Founder & Managing Director, SSTM Egypt**: Pioneering IoT Solutions
  - Established in 2016, SSTM Egypt has been at the forefront of the IoT industry's evolution, committed to developing Industry-Grade Solutions. With founders possessing vast experience in research, electronics design, information technology, and product development, SSTM has consistently pursued R&D initiatives in partnership with multinational organizations. These initiatives have not only achieved high-quality results within budget but have also met operational targets and detailed specifications with excellence. SSTM stands out for its comprehensive understanding of the IoT ecosystem, offering unmatched machine-to-machine and internet of things platforms support. This capability extends to developing custom solutions across every element of the value chain, from 4G, NB-LTE to Zigbee, BLE, LORA, and even wired elements as necessary. In this dynamic environment,

- Main SSTM Products Includes:
  - **IoTik Platform**
    - Spearheaded the development of IoTik, a semi-customized IoT platform for SMEs, enabling rapid deployment of IoT solutions.
    - Innovated with a user-friendly IoT board compatible with different Cloud solutions including AWS, ThingsBoard and others, featuring over 70 sensors/actuators.
    - Facilitated IoT integration with minimal programming, reducing time to market and demonstrating leadership in project execution.
    - Led pitches and participated in marketing activities to promote IoTik, enhancing its visibility and adoption across sectors.

  - **AirZZenn Project**
    - Directed the AirZZenn project, developing a wearable IoT air quality monitor for real-time environmental tracking.
    - Engineered a solution with pre-calibrated sensors for comprehensive air quality metrics, achieving over 5 days of operation per charge.
    - Marketed AirZZenn to health-focused and environmental sectors, showcasing its application in various settings.
    - Conducted pitches and marketing activities to highlight AirZZenn’s innovative approach to air quality monitoring.

  - **ASSET Tracking Project**
    - Led the ASSET Tracking project, implementing BLE beacon tags and IoT platforms for asset and personnel monitoring.
    - Managed the project’s implementation at ZED PARK, demonstrating its effectiveness in real-time tracking.
    - Spearheaded pilots and offered solutions to companies, expanding the project's reach and demonstrating market acceptance.
    - Played a pivotal role in pitches and marketing efforts to secure project adoption and recognition.

  - **IoTPiA**
    - Pioneered the development of IoTPiA, a breakthrough IoT platform designed to simplify IoT application development for SMEs and startups.
    - Championed the platform's design to support over 70 different sensors and actuators, facilitating rapid prototyping and deployment.
    - Led strategic marketing initiatives and pitches to position IoTPiA as a go-to platform for IoT innovation, significantly increasing platform adoption.

- Oversaw the platform's evolution to meet emerging IoT trends, ensuring IoTPiA remained at the forefront of technology advancements.

- **CoolTeck** (Company 1st Developed Product)
  - Orchestrated the launch of CoolTeck, a state-of-the-art solution for energy-efficient cooling technologies.
  - Guided the product development from conceptualization to market launch, highlighting the integration of IoT for smart monitoring and control.
  - Drove marketing strategies and presentations that effectively communicated CoolTeck's benefits and competitive advantages to stakeholders.
  - Established partnerships with key industry players to enhance product visibility and adoption, reinforcing CoolTeck's position in the market.
  - **Top 10 Finalist of MIT Enterprise Forum Pan Arab 2018 idea track with** CoolTeck

For more detailed insights into our projects and the innovative solutions,
you can visit SSTM Brochures and Projects:
www.sstm-eg.com

- Established and Headed **GIU Berlin IoT-Prototyping Lab & GUC Cairo IoT Lab**:
  - Demonstrated leadership by creating state-of-the-art facilities for IoT development, significantly advancing IoT education and research.
  - Led over 60+ diverse IoT & AIOT project development, showcasing a hands-on approach and versatility across various applications, enhancing practical skills in entrepreneurship and innovation.
  - Directed the lab's Implement sensor networks for monitoring environmental conditions, infrastructure health, or agricultural parameters, employing IoT technologies for data collection and analysis.
  - Innovate in wearable technologies, developing smart devices that monitor health metrics or improve personal safety.
  - development from design to component selection, creating a versatile environment for cutting-edge research and innovation.
  - Mastered integration of a wide range of communication technologies (NB-LTE, LORA, SIGFOX, BLE, WiFi), essential for developing reliable and efficient IoT devices and systems.
  - Equipped labs with advanced manufacturing capabilities, including 3D printers, laser cutters, and CNC machines, enabling the production of sophisticated designs prototypes and offering a comprehensive learning experience.
  - Exhibited expertise in PCB design and production, underscoring proficiency in electronic design and manufacturing, crucial for the hardware foundation of IoT devices.
  - Collaborate with industry partners to apply lab research to real-world challenges, driving innovation in sectors like manufacturing, healthcare, and transportation.

- Headed **GIU Berlin Cyber-physical and Robotics Lab**:
  - Led the Design, prototype, and test various robotic systems, ranging from industrial robots to autonomous drones and humanoid robots.
  - Explore human-robot interaction, aiming to improve the way humans and robots communicate and collaborate.
  - Develop self-driving car technologies, focusing on perception, decision-making, and vehicle control.
  - Apply control theory to design systems that can automatically adjust their operation in response to changing conditions, ensuring stability and performance.

MAIN SKILLS

Technical Skills:

- **Embedded Systems and Internet of Things:** Deep expertise in designing and implementing embedded systems for IoT applications, enabling smart, interconnected solutions.
- **Wireless Communications & Protocols**: Comprehensive knowledge in wireless communication standards (IEEE 802.11, Zigbee, WiMax, OFDM, LORA, LTE) for robust IoT connectivity solutions.
- **Real-Time System Design with RTOS**: Specialized in real-time system design utilizing Real-Time Operating Systems (RTOS) for timely and efficient processing in critical applications.
- **IoT Protocols Expertise**: Proficient in advanced IoT communication protocols, including MQTT, CoAP, and others, facilitating efficient device-to-device and device-to-cloud communication.
- **Low Power IoT Design**: Specialized in designing low power consumption strategies for IoT devices, crucial for wearable and portable device longevity.
- **Hardware and Software Integration**: Adept at integrating hardware components with software applications, enhancing functionality and user experience in IoT systems.
- Led product design and packaging initiatives, utilizing advanced techniques such as laser cutting and 3D printing to ensure optimal design quality and user-friendly interaction.
- **Digital and ASIC/FPGA Design Methodologies**: Knowledge in digital design, ASIC, and FPGA development methodologies for creating optimized, high-performance hardware solutions.
  - Co-design (SW/HW) Techniques.
  - Computer Arithmetic Fundamentals.
  - Computer Architecture and Parallel Processing Fundamentals.
  - Microprocessors and CPU Based Designs.
- **Testing and Verification Methodologies:**
  - Formal Verification Techniques, both Model Checking and Theorem Proving Techniques.
- Digital Watermarking, Privacy, and Security Concepts.
- Algorithm Proposition, Analysis and Verification
- IP Protection Techniques.

Design and Verification Languages: VHDL, Verilog, System Verilog, SystemC, PSL

Programming Languages: C/C++, Python, JAVA, Assembly language for Intel 8086 Families, ARM, MIPs, & MC68K.

Non-Technical Skills:

- **Leadership in Technology Innovation**: Demonstrated leadership in guiding teams through the innovation process, from conceptual ideas to market-ready IoT products.
- **Teamwork**: Proven teamwork skills, working collaboratively with diverse groups to achieve project objectives.
- **Strategic Planning and Execution**: Skilled in strategic planning and execution, ensuring that innovative projects align with overall business objectives and are delivered successfully.
- **Effective Communication and Collaboration**: Excellent

communication skills, facilitating effective collaboration within teams and with external partners to drive innovation.
- **Adaptability and Problem-Solving**: Strong adaptability to rapidly changing technology landscapes and proven problem-solving skills in tackling complex technical challenges.
- **Organizational and Project Management**: High organizational skills in managing multiple innovation projects, ensuring they are completed on time and meet quality standards.
- **Performance Under Pressure**: Ability to maintain high performance standards while working under pressure.

GRANTS, AWARDS, and RECOGNITIONS:

- **Best Digital Solutions Provider 2023 – Egypt, African Excellence Awards 2023** 2023
- **Top 10 Finalist of MIT Enterprise Forum Pan Arab 2018 idea track with** CoolTeck 2018
- **Top 10 Finalist of MIT Enterprise Forum Pan Arab 2017 idea track with** Powerup Blinds 2017
- A Software Defined Radio-based LoRa Solution for Dense IoT Deployments within Smart Cities, ITAC Collaborative Research Fund 2023-2025
- Road Surface Deterioration Detection and Severity Analysis using Machine Learning and Subjective Logic, North Carolina Department of Transportation, Idea Track 2022
- Software-Defined Infrastructure for the Internet of Things, DAAD-BMBF Sustainable Research Cooperation. 2017-2019
- Design and Implementation of hardware Internet of Things (IoT) Adaptive Security Supporting System, ITAC Collaborative Research Fund, Information Technology Industry Development Agency. 2017-2018
- An IOT Framework for smart energy Management, German Egyptian Research Fund, Science & Technology Development Fund in Egypt (STDF) 2017-2019
- IOT Framework for Smart Energy Management, DAAD-BMBF Sustainable Research Cooperation. 2015-2016
- DAAD Mobility Fund 2013
- Higher Education HP Technology for Teaching Grant 2009, Principle Investigator. (100,000$) *2009-2010*
- Engineering and Computer Science Student Life Award for Community Achievements *2005*
- J.W. McConnell Memorial Graduate Fellowship, Concordia University *2002-2004*
- Regroupement Stratégique en Microélectronique du Québec (ReSMIQ) Scolarship *2002-2004*
- GRIAO Concordia Graduate Scholarship *2000-2001*
- **Supervised the following Winning Project Teams: :**
  - Vodafone Betavine Second Prize Winner (Eng. Ahmed Alaa) at 2010.
  - Mentor Graphics Higher Education Design Contest 2010 (both first and Second Prizes) for an FPGA implementation of Reed-Solomon Decoder.
  - Vodafone Betavine First Prize Winner (Eng. Mohamed Foad) at 2009.

COMMUNITY SERVICES

- **IEEE Senior Member** *2014-Present*
- Member at **IEEE, IEEE ITS, IEEE Computer, Communications, and Circuits & Systems Societies** *1995- Present*
- GUC **IEEE Student Branch Advisor and Founder** *2012-Now*
- GUC **Insider Magazine Advisor** (Main GUC Campus News Magazine) *2017-Now*
- Smart Cities 4.0 Conference Industrial Committee *2023*
- 1st IEEE International Microwaves and Antennas Symposium in Africa, International 2023

Microwave & Antennas Symposium 2023, Sponsors and exhibitors Committee Head

- Establishment and Conference Secretary of the 1st Joint International Conference of Smart Cities *2019*
- Local Committee Organizer of the 37th National Radio Science Conference *2021*
- Technical Committee Chair of the 4th IEEE international conference on Design & Test of integrated micro & nano-**S**ystems (DTS'22) *2022*
- Grant Reviewer for the 2010 HP Catalyst Grant Initiative *2010*
- **Section Secretary**, IEEE Montreal Section *2005*
- President, Engineering and Computer Science Graduate Association (ECSGA), Concordia University, Montreal, Quebec, Canada *2004- 2005*
- Vice President Services, Graduate student Association (GSA), Concordia University. *2003- 2004*
- Electrical Engineering Representative, ECSGA, Concordia University *2002- 2003*

GRADUATE THESES SUPERVISED

1. Samar Shokry, "Power Analysis for Physical Layer Security in Lora Devices". PHD **Co-supervised with: Prof. Talal El-Shabrawy, & Prof. Frank Kargel, Ulm University. Germany.** (*In progress*)
2. Mohamed Amgad, "Adaptive Edge Based Pedestrian Behaviour Prediction", PHD **Co-supervised with: Prof. Mohamed Zaki, Western University, Ontario, Canada.** *(In progress*)
3. Sherif Afifi, "Design and Implementation of a Retrospective Wireless Sensor Network based on Compressed Sensing", PHD **Co-supervised with: Prof. Watheq El-Kharashi.** (*In progress*)
4. Omnia Mohamed, "Deep-Learning-Based Non-Coherent DPSK Multiple-Symbol Differential Detection in Single-User Massive MIMO Systems", PHD **Co-supervised with: Prof. Ahmed El-Mahdy, & Prof. Robert F. H. Fischer, Ulm University**, 2022
5. Nahla Taha, "Automatic Detection of Multiple Sclerosis in Magnetic Resonance Imaging". Computer Engineering Dept., Ain Shams University, **Co-supervised with: Assoc. Prof. Bassem Amin Abdullah, Aim Shams University, 2023.**
6. M.M. Farag, "Automatic Severity Classification of Diabetic Retinopathy Based on DenseNet and Convolutional Block Attention Module, Electronics Dep., German University in Cairo. 2022
7. Abanoub Mamdouh, " Road Surface Deterioration Detection and Severity Analysis using Machine Learning", **Co-supervised with: Assoc. Prof. Amin K. Akhnoukh, NCU, USA.** 2021
8. Mohamed Amgad," Securing Data Integrity Crowd Sensing using Blockchain: Data Gathering and Bidding System", Networks Dep., German University in Cairo. 2020
9. Samar Shokry, "Fragile watermarking techniques for Communicating Hierarchical FSMs", Electronics Department, Ain Shams University, **AinShams, Egypt.** 2020
10. Ahmed Badr, "Building a Misbehaviour Detection Framework based on Subjective Logic", Networks Department, German University in Cairo.
11. Omnia Mohamed, "ABE Low Power Key Distribution for IOT Low Power systems", Networks Department, German University in Cairo. **Co-supervised with: Prof. Dr. Frank Kargl, Ulm University.**
12. Michael Samir, "Performance Evaluation of Utilizing Generic Timer Module (GTM) processing Unit for Power Train Application in Multi-Core Environment," Electronics Department, German University in Cairo.
13. Mostafa Ghonaim, "Subjective Logic Based Framework for Indoor Localization," Networks Department, German University in Cairo.
14. Ahmed Mikawy, "Evaluation of a µ-Kernel-Based Real-Time Embedded Linux for an LTE/WCDMA Base Station," Networks Department, German University in Cairo. **Co-supervised with: Nokia inc. in**

ULM

15. Samer Shokry, “Fragile watermarking techniques for Communicating Hierarchical FSMs”, Electronics Department, Ain Shams University *(In progress)*

16. Sara Refaai, “Trust Management for Advanced Metering Infrastructure”, Networks Department, German University in Cairo.

17. Rana Helal, “Design of Delay-Tolerant Transmission Protocols for Connecting BLE Sensors using Smartphones as Gateways”, Computer Science Department, German University in Cairo. **Co-supervised with: Dr. Amr El-Mogy**.

18. Yasmin Amin, “Modelling and Verification of Intrusion detection techniques in IEEE 802.15.4g”, Networks Department, German University in Cairo.

19. Michael Wahba, “Wireless RFID into Lean Manufacturing Analysis” Mechatronics Department, German University in Cairo. **Co-supervised with: Dr. Lamia Shihata**

20. Sondos Ismail, “Capacitive Digital Converter Interface based on Memcapacitors for MEMS Capacitive Sensing Applications”, Electronics Department, German University in Cairo. **Co-supervised with: Dr. Ahmed Madian & Dr. Hassan Mosatafa**

21. Hazem Tawfik, “Social Network Modelling Optimization using Graph-Based Data Model”, Computer Science Department, German University in Cairo.

22. Sara A. Ahmed, “IP watermarking techniques for Modular and Communicating FSMs”, Electronics Department, German University in Cairo. **Co-supervised with: Dr. Sofiene Tahar**

23. Ahmed Taha, “Modelling and Verification of WiMax Security Protocols using Abstract State Machines (ASMs)”, Networks Department, German University in Cairo. **Co-supervised with: Dr. Sofiene Tahar**

PUBLISHED PAPERS

BOOKS

[B1] Amr Abdel-Hamid. Sofine Tahar. “Watermarking Techniques for Intellectual Property Protection in SOC”, LAP Lambert Academic Publishing, 2012, ISBN:3843390681 9783843390682.

JOURNAL PAPERS

[J1] B. Mounir, and AT. Abdel-Hamid, “GeoFusion: An Uncertain Machine Learning Framework for Sensor Fusion”, IEEE Access, 2024 (*Submitted*)

[J2] S. Hosny, M. W. El-Kharashi, A. T. Abdel-Hamid, Survey on compressed sensing over the past two decades, Memories-Materials, Devices, Circuits and Systems 4 (2023).

[J3] MM Farag, M Fouad, AT Abdel-Hamid, “Automatic Severity Classification of Diabetic Retinopathy Based on DenseNet and Convolutional Block Attention Module” IEEE Access, 2022, 38299-38308.

[J4] YM Amin, AT Abdel-Hamid, “A Simulation Model of IEEE 802.15. 4 GTS Mechanism and GTS Attacks in OMNeT++/MiXiM+ NETA”, Comput. Inf. Sci. 11 (1), 78-89.

[J5] S Soliman, MA Jaela, AM Abotaleb, Y Hassan, MA Abdelghany, ..., “FPGA implementation of dynamically reconfigurable IoT security module using algorithm hopping”. Integration 68, 108-121

[J6] Yasmin M. Amin, Amr T. Abdel-Hamid, “A Comprehensive Taxonomy and Analysis of IEEE 802.15.4 Attacks”, Journal of Electrical and Computer Engineering, Hindawi Press, Volume 2016 (2016), Article ID 7165952, 12 pages

[J7] A. Cui, C.-H. Chang, S. Tahar, and A. Abdel-Hamid: A Robust FSM Watermarking Scheme for IP Protection of Sequential Circuit Design; IEEE Transactions on CAD of Integrated Circuits and Systems, Vol. 30, No. 5, May 2011, pp. 678-690.

[J8] B. Akbarpour, A. Abdel-Hamid, S. Tahar, and J. Harrison: Verifying a Synthesized Implementation of the IEEE-754 Floating-Point Exponential Function using HOL; The Computer Journal. 10 April 2009, pp. 1-24.

[J9] A. T. Abdel-Hamid, S. Tahar, E.M. Aboulhamid, "A Survey on IP Watermarking Techniques", Design Automation for Embedded Systems, Vol. 9, No. 3, Springer Verlag, July 2005. [29 pages]

CONFERENCE PAPERS

[C1] Nahla Taha, AT Abdel-Hamid and Bassem Abdullah, "Detection of Multiple Sclerosis Using Convolutional Neural Network: A Comparative Study", 2023 10th International Conference on Soft Computing & Machine Intelligence (ISCMI 2023).

[C2] MA Fouad, AT Abdel-Hamid, "On detecting IOT power signature anomalies using hidden Markov model (HMM)" 2019 31st International Conference on Microelectronics (ICM), 108-112 (**Best Paper Award**)

[C3] SMH Shukry, AT Abdel-Hamid, M Dessouky, "Affirming Hardware Design Authenticity Using Fragile IP Watermarking", 2018 International Conference on Computer and Applications (ICCA), 1-347

[C4] O. Mahmoud, H. Kopp, A. T. Abdelhamid and F. Kargl, "Applications of Smart-Contracts: Anonymous Decentralized Insurances with IoT Sensors," *2018 IEEE International Conference on Internet of Things (iThings) and IEEE Green Computing and Communications (GreenCom) and IEEE Cyber, Physical and Social Computing (CPSCom) and IEEE Smart Data (SmartData)*, 2018, pp. 1507-1512

[C5] R. El Khosht, M. El Feshawy, M. El Shorbagy, M. Farag, A. Elsaid, H. Hammad and Amr T. Abdel-Hamid, "A Foldable Textile-based Broadband Archimedean Spiral Rectenna for RF Energy Harvesting", 16th Mediterranean Microwave Symposium (MMS 2016), Abu Dhabi, 14-16 November, 2016. (**Best Paper Award**)

[C6] F. A. Samy, A. Abdel-Hamid, "SAFE: Security Attribute Functional Encryption", International Workshop on Cryptography, Robustness, and Provably Secure Schemes for Female Young Researchers (CrossFyre 2016), July 21 – 22, 2016, Darmstadt - Germany

[C7] M. Nour, A. Abdel-Hamid, "Power Adaptive IoT Security System", International Workshop on Cryptography, Robustness, and Provably Secure Schemes for Female Young Researchers (CrossFyre 2016), July 21 – 22, 2016, Darmstadt - Germany

[C8] Yasmin M. Amin, Amr T. Abdel-Hamid, "Classification and Analysis of IEEE 802.15.4 PHY Layer Attacks", International Conference on Selected Topics in Mobile & Wireless Networking (MoWNet'2016), 11-13 April, Cairo, Egypt.

[C9] M. Wahba, L. Shehata, A. T. Abdel-Hamid, "Introducing Radio Frequency Identifation into Lean Manufacturing ; An application in garment industry", Sixth International Conference on Industrial Engineering and Operations Management (IEOM 2016), Kuala Lumpur, Malysia, March 2016.

[C10] Amr T. Abdel-Hamid, M. Ayman, "ZEIN: An Indoor Zigbee Planning Tool", 11th International Conference on Innovations in Information Technology (IIT'15), Dubai, UAE, November 2015. (***Best Paper Award***)

[C11] Yasmin M. Amin, Amr T. Abdel-Hamid, "Classification and Analysis of IEEE 802.15.4 MAC Layer Attacks", 11th International Conference on Innovations in Information Technology (IIT'15), Dubai, UAE, November 2015.

[C13] Ismail, S., A. Madian, H. Mostafa, and Amr T. Abdel-Hamid, "A Novel Capacitive-to-Digital Converter Interface Based on MemCapacitors for MEMS Capacitive Sensing Applications", International Symposium on Nonlinear Theory and its Applications (NOLTA 2015), Hong

Kong, China.

[C14] Amr T. Abdel-Hamid, M. Harraz, "iWish 2.0: A Wireless in-Wall Smart Home Solution", 5th IEEE International Conference on Consumer Electronics – Berlin ("ICCE-Berlin"), Berlin, Germany, September 2015.

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