

Mahmoud NABIL MAHMOUD

PERSONAL DATA

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EDUCATION

AUG. 2019 PhD
Department of Electrical & Computer Engineering, Tennessee Technological University, TN, USA.
Thesis: "Electricity Theft Detection with Privacy Preservation for Smart Grid AMI Networks Using Machine Learning".
GPA: 4.0/4.0

JUN. 2016 MSc in Electrical Engineering, Cairo University, Egypt.
Thesis: "Sentiment Analysis and Keyphrases Extraction for Arabic Language".
GPA: 3.7/4.0.

JUL 2012 BSc in Computer Engineering, Cairo University, Egypt.
Grade: 91.59% equivalent to 3.94/4.0 GPA - Distinction with honor degree (Ranked third over the department).

WORK EXPERIENCE

AUG. 2017 - NOW **Assistant Professor**, North Carolina A&T, Greensboro, NC, USA.
Role: Teaching graduate and undergraduate courses, advising students, and actively doing department services.

JAN. 2017 - AUG. 2019 **Research Assistant**, Tennessee Technological University, Cookeville, TN, USA.
Role: Working on different projects including privacy preserving ride sharing, dynamic charging systems, data aggregation in smart grid, keyword search over encrypted data, intrusion detection systems for AMI networks.

JUN. 2016 - DEC. 2016 **Lecturer Assistant**, Faculty of Engineering, Cairo University, Cairo, Egypt.
Courses Assisted in: Data structure and Algorithms, Algorithms Labs, Artificial Intelligence, Computer Networks.

SEP. 2012 - JUN. 2016 **Teaching Assistant**, Faculty of Engineering, Cairo University.
Courses Assisted in: Data structure and Algorithms, Computer Architecture, Fundamentals of Multimedia, Microprocessor I, Microprocessor II, Pattern Recognition, Natural Language Processing, Computer Vision, Digital systems, VHDL labs, Image processing labs, Algorithms labs, Artificial Intelligence, Computer Networks.

MAR. 2014 - JUN. 2016 **Research Assistant**, in ITIDA's ITAC project number CFP-65, Cairo, Egypt
Role: Building tools to collect Arabic social dataset from Twitter, analyzing the data, and developing machine learning algorithms to classify the sentiment of the tweets.

MAR. 2013 - MAR. 2014 **Software Developer**, Military main software development center (MSDC), Cairo, Egypt
Role: Implementing and maintaining web applications using C# and Microsoft SQL server.

- AUG. 2013 - MAR. 2014 **Lionbridge Internet Assessor**, Part time , Online
Role: Evaluating Google's search engine results based on some predefined criteria.
- JUN. 2011 - AUG. 2011 **Intern**, in Giza System , Cairo, Egypt
Role: Administrating Linux based operating system (Redhat & Solaris).

RESEARCH INTERESTS

- Security and privacy preservation in
 - Smart grid AMI networks;
 - Self-driven vehicle applications, and
 - Electric vehicle communications;
- Machine learning applications.
- Location privacy-preserving schemes.

JOURNAL PAPERS

- [J1] A. Alsharif, **M. Nabil**, A. Sherif, M. Mahmoud, and M. Songa, "MDMS: efficient and privacy-preserving multi-dimension and multi-subset data collection for ami networks," *IEEE Journal on Internet of Things*, 2019.
- [J2] **M. Nabil**, A. Sherif, A. Alsharif, and M. Mahmoud, "Efficient privacy-preserving ride sharing organization scheme for transferable and non-transferable services," *IEEE Transactions on Secure and Dependable Computing*.
- [J3] **M. Nabil**, M. Ismail, M. Mahmoud, W. Alasmay, and E. Serpedin, "PPETD: privacy-preserving electricity theft detection scheme with load monitoring and billing for AMI networks," *IEEE Access*, 2019.
- [J4] A. Alsharif, **M. Nabil**, and M. Mahmoud, "EPDA: Efficient and privacy-preserving data collection and access control scheme for multi-recipient AMI networks," *IEEE Access* 2019.
- [J5] A. Alsharif, **M. Nabil**, S. Tonyali, H. Mohamed, M. Mahmoud, and K. Akkaya, "EPIC: efficient privacy-preserving scheme with e2e data integrity and authenticity for ami networks," *IEEE Journal on Internet of Things*, vol. 6, no. 2, pp. 3309-3321, 2019.
- [J6] M. Pazos-Revilla, M. Baza, **M. Nabil**, A. Sherif, M. Mahmoud, and W. Alasmay, "Privacy-preserving and collusion-resistant charging coordination schemes for smart grid," *IEEE Access*, 2019. Under Review.
- [J7] M. Baza, **M. Nabil**, N. Bewermeier, K. Fidan, M. Mahmoud, and M. Abdallah, "Detecting sybil attacks using proofs of work and location in VANETs," *IEEE Transactions on Secure and Dependable Computing*. Under Review.
- [J8] M. Nawar, **M. Nabil**, and D. A. El-Reedy, "Bel-arabi: Advanced arabic grammar analyzer," *International Journal of Social Science and Humanity*, vol. 6, no. 5.

BOOK CHAPTERS

- [B1] **M. Nabil**, M. Bima, A. Alsharif, W. Johnson, S. Gunukula, M. Mahmoud, and M. Abdallah, *Smart Cities Cybersecurity and Privacy*, ch. Priority-based and Privacy-preserving Electric Vehicle Dynamic Charging System with Divisible E-Payment. Elsevier, 2018.
- [B2] **M. Nabil**, M. Ismail, M. Mahmoud, M. Shahin, K. Qaraqe, and E. Serpedin, *Deep Learning Applications for Cyber Security*, ch. Deep Learning-based detection of electricity theft cyber-attacks in smart grid AMI networks. Springer, 2018.

CONFERENCE PAPERS

- [C1] **M. Nabil**, M. Ismail, M. Mahmoud, and E. Serpedin, "Deep recurrent electricity theft detection in AMI networks with evolutionary hyper-parameter tuning," in *In Proceedings of the IEEE International Conference on Internet of Things 2019 iThings*, (Atlanta, USA), July 2019.
- [C2] A. Alsharif, A. Shafee, **M. Nabil**, M. Mahmoud, and W. S. Alasmay, "A multi-authority attribute-based signcrypton scheme with efficient revocation for smart grid downlink communication," in *In Proceedings of the IEEE International Conference on Internet of Things 2019 iThings*, (Atlanta, USA), July 2019.

- [C3] M. Baza, **M. Nabil**, N. Lasla, K. Fidan, M. Mahmoud, and M. Abdallah, "Blockchain-based firmware update scheme tailored for autonomous vehicle," in *Proceedings of the International IEEE Wireless Communications and Networking Conference WCNC*, (Marrakech, Morocco), April 2019.
- [C4] M. Baza, **M. Nabil**, M. Ismail, M. Mahmoud, E. Serpedin, and M. A. Rahman, "Blockchain-based charging coordination mechanism for smart grid energy storage units," in *The 2019 IEEE International Conference on Blockchain Blockchain-2019*, (Atlanta, USA), July 2019. Submitted.
- [C5] **M. Nabil**, M. Ismail, M. Mahmoud, M. Shahin, K. Qaraqe, and E. Serpedin, "Deep recurrent electricity theft detection in AMI networks with random tuning of hyper-parameters," in *Proceedings of the International Conference on Pattern Recognition 2018 ICPR*, (Beijing, China), August 2018.
- [C6] **M. Nabil**, A. Alsharif, A. Sherif, M. Mahmoud, and M. Younis, "Efficient multi-keyword ranked search over encrypted data for multi-data-owner settings," in *IEEE International Conference on Communications ICC*, (Kansas City, USA), May 2018.
- [C7] A. Alsharif, **M. Nabil**, M. Mahmoud, and M. Abdallah, "Privacy-preserving collection of power consumption data for enhanced AMI networks," in *the 25th International Conference on Telecommunications ICT*, (Saint-Malo, France), June 2018.
- [C8] **M. Nabil**, A. Atyia, and M. Aly, "Cufe at task 4: A gated recurrent model for sentiment classification," in *In Proceedings of the 10th International Workshop on Semantic Evaluation SemEval*, (San Diego, US), June 2016.
- [C9] **M. Nabil**, A. Atyia, and M. Aly, "ASTD: arabic sentiment tweets dataset," in *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing, EMNLP*, (Lisbon, Portugal), August 2015.
- [C10] **M. Nabil**, A. Atyia, and M. Aly, "New approaches for extracting arabic key phrases," in *International Conference on Intelligent Text Processing and Computational Linguistics CICLing*, (Cairo, Egypt), June 2015.
- [C11] M. Nawar, **M. Nabil**, and M. B. Fayek, "Improved tokenization and pos tagging for arabic text," in *Egyptian Society Conference on Language Engineering ESOLEC*, (Cairo, Egypt), June 2012.

PROFESSIONAL ACTIVITIES

Reviewer, Springer Journal, Peer-to-Peer Networking and Applications.
 Reviewer, IEEE Transactions on Affective Computing.
 Reviewer, IEEE Computer Magazine.
 Reviewer, IEEE Access.

OTHER ACTIVITIES

2019-Now President at North Carolina A&T Society of Hispanic Professional Engineers organization (SHPE).
 2017-2019 President at Tennessee Tech Graduate Electrical & Computer Engineering Student Association (GECESA).
 2015 Judge at made in Egypt graduation projects competition 2015.
 2014 Organizer in IEEE International Computer Engineering Conference ICENCO 2014.

AWARDS

- 2017-Now **Carnegie Classification Scholarship** Fully funded three years PhD scholarship at Tennessee Tech.
- 2012 **Intel Excellent software optimization skills**, awarded by the Intel in for being ranked 27th over more than 750 participants in Acceler8 your code contest 2012.
- 2012 **Graudate Assistantship**, Cairo University, 2012.
- 2012 **2nd position**, in Egyptian Engineering day graduation projects competition over more than 90 participants for “Bel-Arabi” project. “Bel-Arabi” is a C++ machine leaning and information retrieval framework for Arabic texts. It can be used in many natural language processing applications such as machine translation, text to speech, search engines, text mining etc.
- 2011 **Intel Excellent software optimization skills**, awarded by the Intel in for being ranked 12th over more than 500 participants in Acceler8 your code contest 2011 (Won Notebook).

COMPUTER SKILLS

- Programming Languages** Python, C++, Java, C#, Assembly 8086, SQL, Linux shell, VHDL, Verilog, MATLAB, Perl, Javascript, QML.
- Web based Development** Microsoft ASP .NET, Web Services using Microsoft .NET platform, Javascript, Java applets, PHP, CSS, HTML.
- Databases** Microsoft SQL Server, MySQL.
- Tools** Microsoft Visual Studio, Intel parallel studio, Nunit, TestStudio , Modelsim ,NetBeans , MATLAB , QT Creator, Pycharm, Eclipse, Pycharm, Proteus, TexStudio.

PROFESSIONAL REFERENCES

1. Mohamed Mahmoud

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Relation: Ph.D. supervisor.

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Relation: Research Collaborator

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Relation: Research Collaborator