Resume

Personal

Name   *Shymaa M. Arafat*

Email   Shymaa.arafat@gmail.com, shar.academic@gmai

GitHub   https://github.com/DrShymaa2022/,
https://github.com/Shymaa-Arafat/

Medium   https://medium.com/@shymaa.arafat/

Facebook   https://m.facebook.com/100010333725264/

YouTube.   https://youtube.com/@shymaaarafat1342

Researchgate https://www.researchgate.net/profile/Shymaa-Arafat

Wallet address 0xe8a9e41b726ba3eae6837dcf74e00e2d224d5842

Address Egypt.

Previous Positions

- Visting Associate Professor at Beirut Arab University (2/2012-4/2012)
  Faculty of Engineering, Computer Science & Engineering Dept.
- Part time Associate Professor in Computer Engineering Dept., Pharos University
  (Spring 2011, Fall 2009)
- Full time Associate Professor at the Computer Science Dept., Faculty of
  Computer & Information Sciences, Ain Shams University. (started 1/10/1999 as
  an assistant lecturer, and resigned 7/7/2008)
- Teached as a part-time lecturer/ professor in many universities & Institutes in the
  same Interval (99-2008) as listed in the teaching experience

- Research Assistant at Mubarak City for Scientific Research & Technological
  Applications, Infromatics Institute (4/1995- 30/9/1999)

(worked mostly in a virtual reality application where we took a training of the
Worldup Software, and worked on developing a walk thru application)
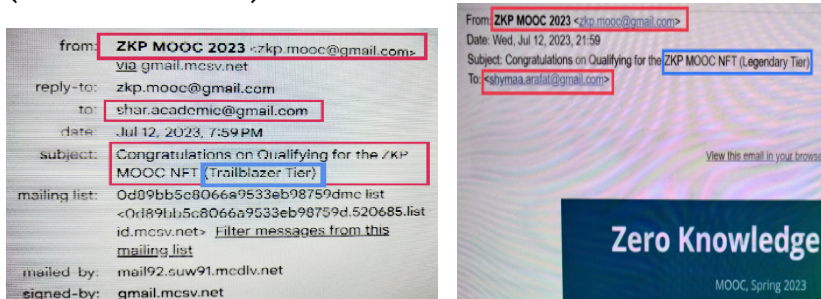
Education Record

ZKP MOOC online course (Winter 2023)
Zero Knowledge course offered by Berkeley University
https://zkp-learning.org
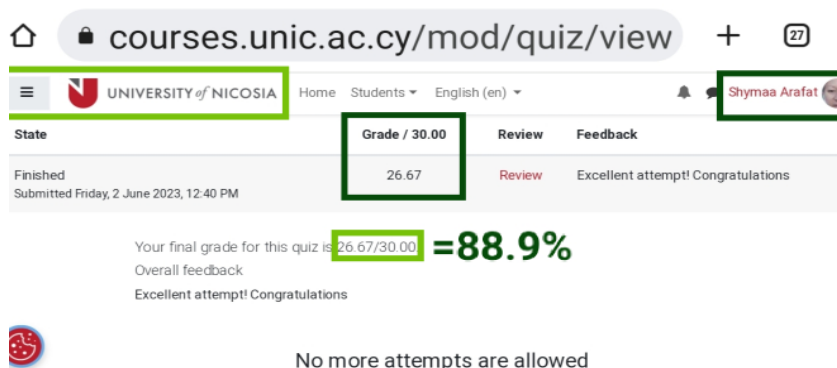Earned Legendary Tier & Trailerblazer Tier NFTs.
(Still to be issued)

Introduction to DeFi MOOC (Spring 2023)
A compact 6 week online course offered by University of Nicosia
Final grade **88.9**, (26.67/30, No free NFT)

Introduction to Digital Currencies MOOC (Spring 2023)
Offered by University of Nicosia
Final grade **85.67**, NFT issued on 23/5/2023.
https://app.block.co/certificate/f640aada-8353-43bb-9126-f6a64b829b90/

DeFi MOOC online course (Fall 2021)
Decentralized Finance course offered by Berkeley University
https://defi-learning.org/f21
Earned the NFT Ninja-Tier
https://gallery.metamirror.space/detail/?item=defimooc2021nft-41

Ph.D. in Computer Science (July 2001)
Alexandria University, Faculty of Engineering, Computer Science & System Engineering Dept.
http://193.227.0.100/eulc_v5/Libraries/Thesis/BrowseThesisPages.aspx?fn=ThesisPicBody&BibID=10011669

Title of Thesis *Operating on Optimal Binary Code Trees*

Supervisors

        Prof. Dr. Ahmed A. Belal

        Prof. Dr. Mohamed S. Selim

Ph.D. Courses

Course Name	Teaching Professor	Grade
Parallel & Distributed Systems	Dr. Hussain Ali	V. Good
Security in Computer Networks	Dr. Ahmed Belal	Distinction
Probabilistic Algorithms	Dr. Ahmed Belal	Distinction

M.Sc. in Computer Science (July 1997)

University of Alexandria, Faculty of Engineering, Computer science & Automatic Control Dept.

http://193.227.0.100/eulc_v5/Libraries/Thesis/BrowseThesisPages.aspx?fn=PublicDrawThesis&BibID=10153838

Title of Thesis *An Efficient Parallel Sample Sorting Algorithm*

Supervisors

        Prof. Dr. Ahmed A. Belal

        Prof. Dr. Nagwa M. el-Makky

Master Courses

Course Name	Teaching Professor	Grade
Networking Personal Computers	Dr. Walid Aref	Distinction
Advanced Studies on Data Bases	Dr. Nagwa el Makky	V. Good
Algorithms Design & Analysis	Dr. Ahmed Belal	Pass *
Modern Control Theory	Dr. Ibrahim Abd el Salam	Distinction
Hard Ware	Dr. Salah Selim & Dr. Layla Abu Hadid	V. Good
Natural Language Processing	Dr. Ahmed el Nahas	Pass

* The course is offered on a pass/Fail basis

B.Sc. in Computer science & Automatic Control (June 1994)

University of Alexandria, Faculty of Engineering, Computer science & Automatic Control Dept.

Graduation Grade   Very Good (84.39%) with degree of honor

Graduation Project   Simulation of Storage Subsystems

Project Grade   Distinction

AMID-EAST Exams

TOEFEL <u>627</u> in 10/1995

TWE <u>4</u>   in 10/1995

TSE <u>40</u> in 10/1996

GRE General
verbal <u>380</u>, analytical <u>670</u> , quantitative <u>780</u> in 10/1995

<u>GRE Subjective</u> in Computer Science <u>84</u> in 11/1998

Activities
Winner of a research grant offered by the Center of Special Studies and Programs (CSSP), Bibliotheca Alexandrina (March 2005)
https://www.bibalex.org/cssp/Researchs/2004.htm
https://www.bibalex.org/cssp/Event/Event.aspx?ID=55
Research Title: "Providing Secure Communications for Wireless and Wireline Applications"
Foreigner Counterpart: Prof. Dr. Hesham el Rewini,
Chairman of Computer Science & Engineering Dept., Faculty of Engineering, Southern Methodist University (SMU), USA
(involved a 2 weeks visit to SMU in 11/9/2005-25/9/2005)

Teaching Experience

Course Name	Academic year	University	Date
Algorithms Design & Analysis	Post graduate-Computer sciences	Faculty of Science, Alexandria University	3/2004-/2004 3/2003-/2003
Compilers Theory	4th year –Computer science		9/2003-1/2004
Computer Systems & Architectures	3rd year –Computer science		9/2002-1/2003
Artificial Intelligence	3rd year	Faculty of Computer & Information Sciences	2/2004–6/2004
Operating Systems	3rd year		2/2008
Compiler Theory	4th year –Computer science	Ain shams University	9/2002-1/2003 Till now
Computer Security	4th year –Computer science		2/2002-6/2002 2/2003-6/2003
Digital Design	2nd year		9/2001-1/2002
Advanced Compilers Design	Post graduate-Computer Science		10/2003-2/2004 10/2002-2/2003
Introduction to wireless networks	4th year –Computer science		1/2005 - 5/2005
Parallel & distributed systems	4th year –Computer science		1/2005 - 5/2005
Structured Programming	1st year		1/2006-5/2006 Till now
Distributed Operating Systems	Post graduate – computer science		10/2005-2/2006
Report Writing			2/2006-6/2006
Preparing Research Material			
Computing Algorithms	10th &7th term – Computer Engineering	Arab Academy for Science & Technology Arab Academy for Science & Technology	2/2003-6/2003
Advanced Programming	3rd term – Computer science		
Digital Design	3rd term-Computer Science & Computer Engineering		
Programming Applications	Summer course		7/2003

Computer Systems	4th year −Electrical Engineering	Alexandria Institute of Technology	9/2003-1/2004
Algorithms Design & Analysis	2nd year −Computer Engineering		
Information Technology	3rd year −Computer Engineering		2/2004-6/2004
Formal Languages	3rd year −Computer Engineering		
Operating Systems	3rd year Computer Engineering	Pharos University	9/2009-2/2010
Computer & Networks Security	4th year −Computer Engineering	Pharos University	3/2011-7/2011
Data Structures	2nd year−Computer Engineering	Beirut Arab University	2/2012-4/2012

Publications

1- S. Arafat, A. Belal, N. el-Mekky, "A new parallel sample sorting algorithm", *In Proceedings of the IASTED conference on Computer Systems & Applications*, 30 March- 2 April 1998, Irbid, Jordan.

2- A.Belal, M. Abd el Azim, S. Arafat, "Limiting the search for two dimensional optimal alphabetic trees", *In Proceedings of The Fourth Joint Conference for Information Sciences JCIS98*, 23-28 October 1998, North Carolina, USA; http://dimacs.rutgers.edu/archive/TechnicalReports/abstracts/1998/98-43.html

3- A. Belal, M. Selim, S. Arafat, "Rebuilding Huffman Trees in Linear Time", *In Proceedings of The Seventh Maghrebian Conference on Computer Sciences MCSSEAI' 2002*, 6-8 May 2002, Annaba, Algeria.

4- A. Belal, M. Selim, S. Arafat, "Merging Optimal Alphabetic Trees in Linear Time", *In Proceedings of The First International Conference on Intelligent Computing & Information Systems ICICIS 2002*, 24-16 June 2002, Cairo, Egypt.

5- A. Belal, M. Selim, S. Arafat, "Building Optimal Alphabetic Trees Recursively", *The 3rd WSEAS International Multiconference on Mathematics Math 2002*, 1 -5 September 2002, Wolin Island, Poland, Vol 1, Issue2 of WSEAS Transaction on Mathematics, 2002, pp.77-82.

6- A. Belal, M. Selim, S. Arafat, "*Towards an Optimal Dynamic Alphabetic Tree*", International journal on Intelligent Computing & Information Systems IJICIS; http://archive.dimacs.rutgers.edu/TechnicalReports/abstracts/1999.sav/99-22.html

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7- S. Arafat, "An Efficient simple Algorithm for Building Optimal Alphabetic Trees in Parallel", *WSEAS International Conference on Algorithms and Scientific Computing,* Vol 2, Issue3 of WSEAS Transaction on Computers, July 2003.

8- M.Syam, M. Hashem, S. Arafat, M .Mabrouk, "Neural Networks for Computer Virus Detection ", *The 4th WSEAS International Conference on Neural Networks and Applications,* May 2003, Athens, Greece*,* Vol 2, Issue3 of WSEAS Transaction on Systems, July 2003.

9- M.Syam, Z. Fayed, S. Arafat, N. .Hossam el Din, "Efficient Probabilistic Fault -tolerant Scheduling Algorithm for Real-time Tasks in Heterogeneous Multi-Processor Systems", *The 4th WSEAS International Conference on Computer Systems*, Dec 2004, *New York.* Vol 2, Issue3 of WSEAS Transaction on Systems, April 2004.

10- S. Arafat, "Encryption Using Alphabetic Trees", *The 3rd ACS/IEEE International Conference on Computer Systems and Applications,*

(AICCSA'05), Jan 2005, Cairo, Egypt;
https://ieeexplore.ieee.org/abstract/document/1387083/

11- M.Syam, Z. Fayed, S. Arafat, N. .Hossam el Din, "An Efficient Online Scheduling Algorithm For Real Time Tasks In Multi Processor Systems", *2nd International conference on Intelligent computing & Information Systems ICICIS*, 5-7 March 2005, Cairo, Egypt.

12- M.Syam, S.Arafat, A.Ibrahim, "A CFG Based Authorization Frame Work", *2nd International conference on Intelligent computing & Information Systems ICICIS*, 5-7 March 2005, Cairo, Egypt.

13- M.Syam, M. Hashem, S. Arafat, M .Mabrouk, " Data Mining for Computer Virus Detection", *2nd International conference on Intelligent computing & Information Systems ICICIS*, 5-7 March 2005, Cairo, Egypt.

14- M. Tolba, S. Arafat, R. Kotb, "Analysis of Alphabetic Tree Cipher", *the 4th International Multi conference in Computer Science & Information Technology*, 5-7 April 2006, Amman, Jordan.

15- S.Arafat, Y.Dakroury, A.Wahab, *"An Efficient and Secure Ad hoc Routing Protocol"*, Global Engineering Science and Technology Society (GESTS) Transaction On Computer Science & Engineering, Vol. 32 and No.1, Sept.2006; https://dblp.org/pid/81/7056.html (was accepted in IEEE conference)

16- M. Tolba, S. Arafat, R. Kotb, *"Comparing Alphabetic Tree Cipher (ATC) to RC5, RC6 and Rijndael"*, International journal on Intelligent Computing & Information Systems IJICIS, 2006.

17- Draft talk on Algorithmic Game Theory
https://m.facebook.com/story.php?story_fbid=1018702451817536&id=100
010333725264

18- Draft talk on Blockchain Market Manipulation Attacks
https://m.facebook.com/story.php?story_fbid=1386287771725667&id=100
010333725264

19- S. Arafat, "*Partitioning Bitcoin UTXOS Merkle Tree Into Different SubTrees To Reduce Proof Size*", https://github.com/Shymaa-Arafat/lab2/blob/main/DeFi_2UTXOS2_NewOutline.pdf; rejected
(an earlier version was rejected by EAI BlockTEA 2021 Springer Verlag conference, but got research points 5
https://escripts.eai.eu/apiprofilemanager.php?user=c91cf9e7-9dbf-493f-b3c9-69b3b49f5ff5); rejected by DeFi'22,
Reviewer1: border line paper, reviewers2&3: Bitcoin issue, not related to DeFi. The detailed review reports can be found on the Facebook link.
https://m.facebook.com/story.php?story_fbid=1567082160312893&id=100
010333725264

20- S. Arafat, "*Providing Non-inclusion Proofs in Bitcoin append to right UTXOS Merkles*", https://github.com/Shymaa-Arafat/lab2/blob/main/DeFi_3fraudProofs.pdf; rejected by DeFi'22, Reviewer1&2: Bitcoin issue, not related to DeFi. The detailed review reports can be found on the Facebook link. https://m.facebook.com/story.php?story_fbid=1566310467056729&id=100010333725264

21- S. Arafat, " *The Effect of Propagation Delay Due to Geo-distribution on Blockchains*", https://github.com/Shymaa-Arafat/lab2/blob/main/DeFi_MOOC_Article.md, Article submitted in partial fullfilment of the DeFi MOOC course 2021

22- S. Arafat, https://shymaaarafat.wordpress.com/2022/02/12/bitcoin-dust-utxos-are-way-too-much-and-increasing-while-total-utxos-are-decreasing/

23- S. Arafat, " *SoK : Can NFTs Solve The Economic Problems of Countries with Ancient Heritage? Egypt as a Case Study*", https://github.com/Shymaa-Arafat/lab2/blob/main/CameraReady_1sprngr_EgyptN.pdf, https://youtu.be/mT7qSMvV7FQ; accepted by EAI BlockTEA 2022 Springer Verlag conference; https://link.springer.com/chapter/10.1007/978-3-031-31420-9_10.

24- S.Arafat, https://medium.com/@shymaa.arafat/what-are-verkle-trees-kzg-commitments-and-could-they-be-applied-on-bitcoin-cbf4838d18ac; an article submitted (on 6 May 2023) in partial fulfilment of the Trailerblazer Tier of the ZK MOOC course 2023.

25- S. Arafat, https://medium.com/@shymaa.arafat/fiat-shamir-transformation-and-its-security-problems-shymaa-m-a14d8f7d9192; an article submitted (on 6 May 2023) in partial fulfilment of the Trailerblazer Tier of the ZK MOOC course 2023.

26- S. Arafat, https://medium.com/@shymaa.arafat/metaverse-threats-liabilities-c7d8fd50a21d; 18/6/2023.

27- S. Arafat, https://medium.com/@shymaa.arafat/defi-attacks-part-1-1906a9307fe2; 21/6/2023.

28- S. Arafat, https://medium.com/@shymaa.arafat/defi-attacks-part-2-45c7e2c9c00; 25/6/2023.

29- S. Arafat, https://medium.com/@shymaa.arafat/cbdcs-part1-1da3a944722c; 7/2023

30- S. Arafat, https://medium.com/@shymaa.arafat/what-happened-to-polynetwork-2021-then-2023-2e991e29655b; 23/10/2023.

31- S. Arafat, https://github.com/DrShymaa2022/articles_papers/blob/main/Understanding_CrossChain_Interoperability_Solutions-_part1.pdf; 30/10/2023.

32- S. Arafat, https://medium.com/@shymaa.arafat/on-the-estonian-internet-voting-system-ivxv-141a30ef5e5e; 23/3/2024.

33- S. Arafat, "*SoK: Consensus Protocols in Blockchains*" https://github.com/DrShymaa2022/articles_papers/blob/main/consensus_arXiv.pdf; 16/4/2024, currently under review.

34- S. Arafat, "*Blockchains in Water Management & Trading*", https://github.com/DrShymaa2022/articles_papers/blob/main/waterBlockchain_arXiv.pdf; 19/4/2024, currently under review.