Curriculum Vitae – Nadav Voloch

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Education:

2022 - 2023 Post-Doctoral Fellow, IMT School for Advanced Studies Lucca, Italy. Misinformation and Security in Social Networks. Under the instruction of Prof. Rocco De Nicola.

2018- 2022 Ph.D. in computer science at the Ben-Gurion University of the Negev, Israel. Thesis: A Comprehensive trust-based information security model for Online Social Networks. Under the instruction of Prof. Ehud Gudes.

2012 –2017 M.Sc. in computer science at the Open University of Israel. Thesis: Sphere-marking-based algorithms for efficient creation of Error Correcting Codes.

2015 –2022 B.A in Psychology at the Open University of Israel.

2007-2010 B.A in computer science – software systems, Sapir Academic College, Israel.

Academic teaching:

2016- present: Ruppin academic center, departments of electronic and computer engineering.   Lecturer and final projects' advisor. Courses- Software engineering, Android, Database systems, Cyber security – intro and advanced lab.

2018-2022: Ben-Gurion University of the Negev**,** Departments of computer science. Instructor**.** Courses-Workshop on Software Engineering project, Automata and formal languages, Privacy preserving data mining methods for Big Data**.**

2019-2021: Peres Academic Center, department of information systems. Lecturer. Courses-Networks communication, Android development, Object oriented system analysis, several Cyber security courses.

2013-2019: The College for Academic Studies in Or-Yehuda, departments of computer science and information systems. Lecturer, researcher and final-projects director. Courses-Databases, Assembly, Java, web-programming, Data structures, Python, C, Information networks security, Android development, Object oriented system analysis.

2016-2018: The Academic College of Tell-Aviv Jaffa, department of information systems. Adjunct faculty. Courses- Databases, Java, web-programming, Data structures, C++.

2010 – 2018: Sapir Academic college, departments of computer science and industrial management. Lecturer and TA. Courses- Automata and formal languages, Databases, Information systems analysis, Cyber Security, Communication networks, distributed object programming; advanced programming in Java, data structures, Algorithm design.

Technological employment experience:

2022- present TPIM: Head of research: https://tpim.io/team

2022- present BrainPM: Co-founder. An ML and AI comprehensive Project Management tool**:** https://www.brain-pm.com/

2019 – 2020: Webselenese-VPNMentor: Cyber security researcher and analyst.

2007 – 2022: Voloch Knowledge Horizons: www.volochay.com - Founder and owner. Web solutions; technological and academic research; technological consulting and instruction.

2005 – 2007: Applied Materials: Programmer at the development support team on winNT; Weizmann institute of science: instructing a youth science program for the "Atidim" Project of the ministry of defense.

Publications:

[1] Barzilai, O., Rika, H., Voloch, N., Hajaj, M.M., Steiner, O. & Ahituv, N. (2023). Using Machine Learning techniques to incorporate social priorities in traffic monitoring in a junction with a fast lane. Transport and Telecommunication Journal, 24(1), 1-13. doi: 10.2478/ttj-2023-0001

[2] Voloch, N., Hajaj, M.M. (2022). Handling Exit Node Vulnerability in Onion Routing with a Zero-Knowledge Proof. In: Pardede, E., Delir Haghighi, P., Khalil, I., Kotsis, G. (eds) Information Integration and Web Intelligence. iiWAS 2022. Lecture Notes in Computer Science, vol 13635. Springer, Cham.

[3] Voloch, N., Gudes, E., Gal-Oz, N. Mitrany, R., Shani, O., & Shoel, M. (2022). Fake News Detection in Social Networks using Machine Learning and Trust. In International Symposium on Cyber Security Cryptography and Machine Learning. Springer, Cham.

[4] Voloch, N., Gudes, E., & Gal-Oz, N. (2021).Preventing Fake News Propagation in Social Networks using a context Trust-based security model. 15th International Conference on Network and System Security (NSS21)

[5] Voloch, N., & Voloch-Bloch, N. (2021, November). Finding the fastest navigation rout by real-time future traffic estimations. In 2021 IEEE International Conference on Microwaves, Antennas, Communications and Electronic Systems (COMCAS) (pp. 13-16). IEEE.

[6] Voloch, N., Gal-Oz, N., & Gudes, E. (2021). A Trust based Privacy Providing Model for Online Social Networks. Online Social Networks and Media, 24, 100138.

[7] Voloch, N., Gudes, E., & Gal-Oz, N. (2021, July). Implementing GDPR in Social Networks Using Trust and Context. In International Symposium on Cyber Security Cryptography and Machine Learning (pp. 497-503). Springer, Cham.

[8] Voloch N., Gudes E., & Gal-Oz N. (2021) Analyzing the Robustness of a Comprehensive Trust-Based Model for Online Social Networks Against Privacy Attacks. In: Benito R.M., Cherifi C., Cherifi H., Moro E., Rocha L.M., Sales-Pardo M. (eds) Complex Networks & Their Applications IX. COMPLEX NETWORKS 2020 2020. Studies in Computational Intelligence, vol 943. Springer, Cham. https://doi.org/10.1007/978-3-030-65347-7_53

[9] Barzilai, O., Giloni, A., Voloch, N., & Steiner, O. (2020). Auction Based Algorithm for a Smart Junction with Social Priorities, Transport and Telecommunication Journal, 21(2), 110-118. doi: https://doi.org/10.2478/ttj-2020-0008

[10] Voloch, N., Voloch - Bloch, N. & Zadok, Y. (2019) 'Managing large distributed dynamic graphs for smart city network applications'. Applied Network Science 4, 130. Springer Open, Cham. doi:10.1007/s41109-019-0224-2

[11] Voloch, N., Levy, P., Elmakies, M., & Gudes, E. (2019). 'A Role and Trust Access Control model for preserving privacy and image anonymization in Social Networks'. In *13th IFIP WG 11.11 International Conference on Trust Management (IFIPTM'19)*. Springer, Cham.

[12] Voloch, N., Levy, P., Elmakies, M., & Gudes, E. (2019, June). 'An Access Control Model for Data Security in Online Social Networks Based on Role and User Credibility'. In *The international Symposium on Cyber Security Cryptography and Machine Learning* (pp. 156-168). *Lecture Notes in Computer Science,* vol 11527. Springer, Cham.

[13] Voloch, N. & Gudes, E. (2019). ' An MST-based information flow model for security in Online Social Networks'. *In The IEEE 11th International Conference on Ubiquitous and Future Networks (ICUFN19).* Springer, Cham.

[14] Fine, Z., Brayer, E., Proshtisky, I., Barzilai, O., Voloch, N. & Steiner, O. L. (2019) 'Handling traffic loads in a smart junction by social priorities. *In proceedings of IEEE COMCAS– the International IEEE Conference on Microwaves, Communications, Antennas and Electronic Systems.*

[15]   Zadok, Y., Voloch, N. (2019) 'PBL Effects on Engineering Education in Junior High School Robotics Practice**',** *WSEAS Transactions on Advances in Engineering Education,* ISSN / E-ISSN: 1790-1979 / 2224-3410, Volume 16, 2019, Art. #5, pp. 36-48

[16]   Gudes E., Voloch N. (2018) 'An Information-Flow Control Model for Online Social Networks Based on User-Attribute Credibility and Connection-Strength Factors'. In: Dinur I., Dolev S., Lodha S. (eds) *Cyber Security Cryptography and Machine Learning. CSCML 2018. Lecture Notes in Computer Science,* vol 10879. Springer, Cham

[17]   Barzilai, O., Voloch, N., Hasgall, A., & Steiner, O. L. (2018, December). 'Real life applicative timing algorithm for a smart junction with social priorities and multiple parameters'. In *2018 IEEE International Conference on the Science of Electrical Engineering in Israel (ICSEE)* (pp. 1-5). IEEE.

[18]   Barzilai O., Voloch, N. , Hasgall A., Steiner O.L., Ahituv, N. (2018) 'Traffic Control in a Smart Intersection by an Algorithm with Social Priorities', *Contemporary Engineering Sciences*, Vol. 11, 2018, no. 31, 1499 – 1511

[19]   Zadok, Y., Voloch, N. (2018) 'Applying PBL to teaching robotics', *Int. J. Innovation and Learning,* Vol. 24, No. 2, pp.138–151.

[20]   Voloch, N. (2017) ' MSSP for 2-D sets with unknown parameters and a cryptographic application '. *Contemporary Engineering Sciences*, Vol. 10, 2017, no. 19, 921-931

[21]   Voloch N., Zadok, Y. (2017) ' Implementing efficient paths in a knapsack-item weighted graph on IoT architecture '. *In proceedings of IEEE COMCAS– the International IEEE Conference on Microwaves, Communications, Antennas and Electronic Systems.*

[22]   Voloch N. (2017) ' Optimal paths of knapsack-set vertices on a weight-independent graph '. *WSEAS Transactions on Computers*, Volume 16, 2017 Art. #18, pp. 163-171

[23]   Voloch N. (2016) ' Finding the most efficient paths between two vertices in a knapsack-item weighted graph ', *International Journal of Advanced Computer Research.* Vol.7,   Issue   28

[24]   Voloch N., Birnbaum E., Sapir A., (2014) ' Generating Error-Correcting Codes based on Tower of Hanoi Configuration Graphs *', In proceedings of IEEE 28-th Convention of Electrical and Electronics Eng., Israel.*

Reviewer:

- *Recent Advances in Computer Science and Communications, Bentham Science Publishers 2023*

- *International Conference of Modern Systems Engineering Solutions (IARIA MODERN SYSTEMS 2023)*

- *Springer International journal of information Security, 2022*

- *Taylor & Francis Behaviour & Information Technology journal, 2022*

- *Elsevier Data & Knowledge Engineering journal, 2022*

- *6th international Symposium on Cyber Security Cryptography and Machine Learning (CSCML'22)*

- *35th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec'21)*

- *34th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec'20)*

- *13th IFIP WG 11.11 International Conference on Trust Management (IFIPTM'19).*

- *3rd international Symposium on Cyber Security Cryptography and Machine Learning (CSCML'19)*
- *33rd Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec'19)*
- *12th IFIP WG 11.11 International Conference on Trust Management (IFIPTM'18).*

Program Committee member:

- *International Conference of Modern Systems Engineering Solutions (IARIA MODERN SYSTEMS 2023)*
- *15th International Conference on Network and System Security (NSS21)-* Session Chair.
- *14th IFIP WG 11.11 International Conference on Trust Management* (*IFIPTM'20*) – Web Chair.
- *World Congress on Big Data, Data Mining and Cloud Computing (WCBDDMCC-2020)*
- *8th International Conference on Peer-to-Peer Networks and Trust Management (P2PTM 2018)*

Awards and Scholarships:

- *Cyber center BGU, Prime Minister's Office- research scholarship for Ph.D.(2018-2022).*

- *Quality paper award from the department of Computer Science in the Ben Gurion University of the Negev for:*

  Voloch, N., Gudes, E., Gal-Oz, N. Mitrany, R., Shani, O., & Shoel, M. (2022). Fake News Detection in Social Networks using Machine Learning and Trust. In International Symposium on Cyber Security Cryptography and Machine Learning. Springer, Cham.

  Voloch, N., Gudes, E., & Gal-Oz, N. (2021).Preventing Fake News Propagation in Social Networks using a context Trust-based security model. 15th International Conference on Network and System Security (NSS21)

- *Quality paper award from the department of Computer Science in the Ben Gurion University of the Negev for:*

  Voloch, N., Gal-Oz, N., & Gudes, E. (2021). A Trust based Privacy Providing Model for Online Social Networks. Online Social Networks and Media, 24, 100138.

- *Quality paper award from the department of Computer Science in the Ben Gurion University of the Negev for:*

  Voloch, N., Levy, P., Elmakies, M., & Gudes, E. (2019). 'A Role and Trust Access Control model for preserving privacy and image anonymization in Social Networks'. In *13th IFIP WG 11.11 International Conference on Trust Management* (*IFIPTM'19*). Springer, Cham.

- *"Atidim" Excellence Project scholarship of the ministry of defense, Israel (2005-2007).*

- *The jewish agency "Boharim Mahar" Excellence Project scholarship (2006-2008).*

Programming skills:

Java, Python, C, SQL, HTML- CSS, JavaScript, Android.