Name: Eliav Menachi   **Date:** February 2021
College of Management Academic Studies
School of Computer Science

CURRICULUM VITAE

1. Personal Details

Permanent Home Address: Tel Hai 31/7 Ashdod

Cellular Phone: +972-54-6701995

Electronic Address: eliavme@colman.ac.il

Marital Status: Married +2

2. Higher Education

A. Undergraduate and Graduate Studies

B.Sc. in Communication Systems Engineering, *Ben-Gurion University, Communication System Engineering.*
Summa cum laude, cumulative grade 95.
Graduation date 2000

M.Sc. in Information Systems Engineering, *Ben-Gurion University, Industrial Engineering and Management, Information Systems.*
Thesis: Service Layer Architecture for Ethernet-based Networks.
Supervisor: Prof. Ran Giladi, Dept. of Communication Systems Engineering
Graduation date 2009

B. Doctoral Degree and Post-Doctoral Studies

PhD. in Information Systems Engineering, *Ben-Gurion University, Industrial Engineering and Management, Information Systems Engineering.*
Research: Ethernet Transport Networks
Supervisor: Prof. Ran Giladi, Dept. of Communication Systems Eng.
Graduation date 2014

Post-Doctoral in Information Systems Engineering, *Ben-Gurion University, Industrial Engineering and Management, Information Systems Engineering.*
Research: Ethernet Transport Network
Supervisor: Prof. Ran Giladi, Dept. of Communication Systems Eng.
Graduation date 2015

3. **Academic Ranks and Tenure in Institutes of Higher Education**

Dates	Institution and Department	Rank/Position
2010 - 1014	Communication System Engineering, BGU	Junior Academic Staff
2010 - 1014	Industrial Engineering and Management, BGU	Junior Academic Staff
2013 - 2016	Computer Science, HIT	External Academic Staff
2012 - 2013	School of Computer Science, COLMAN	External Academic Staff
2014 - 2015	School of Computer Science, COLMAN	Academic Staff
2015 - today	School of Computer Science, COLMAN	Research Academic Staff

4. **Offices in Academic Administration**

1. 2011, Organizing Mobile Application Contest sponsored by Google, *Department of Communication System Engineering, Ben-Gurion University of the Negev*
2. 2013 – 2016, Head of Mobile Systems Program, *School of Computer Science, College of Management Academic Studies*
3. 2015 – 2016, Head of Computer Communication Technologies, *School of Computer Science, College of Management Academic Studies*
4. 2015 – 2016, Member in the Teaching Committee, *School of Computer Science, College of Management Academic Studies*
5. 2014 – 2016, Member in the Unit Committee, *School of Computer Science, College of Management Academic Studies*
6. 2016, Member in the Steering Committee of the Center for Solving Major and Complex Problems, *College of Management Academic Studies*
7. 2016, member of the Center of Career Management, *College of Management Academic Studies*
8. 2016 – 2018, Head of Industry Relations and Collaboration, *School of Computer Science, College of Management Academic Studies*
9. 2019 – today, Graduation Projects Manager, *School of Computer Science, College of Management Academic Studies*
10. 2020 – today, Head of *Full Stack Development program*, *School of Computer Science, College of Management Academic Studies*

5. Scholarly Positions and Activities outside the Institution

2008 – 2009   ETNA Project manager, *Communication System Engineering, Ben-Gurion University of the Negev*
Managing Research & Development of ETNA's (FP7 Future Ethernet) project at BGU. Coordinating consortium partners (BT, NSN, ETHOS and TKK). 2 years project funded by EU grant of 2MEuros.
- Managing a research team of 3 Ph.D's academic staff and 12 under graduate students.
- Developing a generic forwarding element based on EZchip network processor
- Implementing network protocols: IS-IS, RSTP, MSTP, 802.1D/Q/ad/ah
- Developing proprietary network protocols over Ethernet

6. Participation in Scholarly Conferences

Active Participation

Date	Name of Conference	Place	Subject of Lecture/Discussion	Role
2009	IEEE GLOBECOM Workshop on Below IP Networking	Hawaii	ETNA's Service Layer Architecture for Automatic Provisioning of Inter-Domain Ethernet Transport Services	Article writer
2010	Networking and Electronic Commerce Research Conference	Italy	A Service Layer for Providing Inter-CSP Transport Services	Presenter
2015	Mobile 2015	Israel	Selected Graduate mobile applications	Presenter
2020	OpenSky Symposium	Virtual	Validating Aircraft Noise Models	Article writer

6. Invited Lectures\ Colloquium Talks

Date	Place of Lecture	Name of Forum	Presentation/Comments
2014	Department of Industrial Engineering and Management, Ben-Gurion University of the Negev	Colloquium	Ethernet Transport Network
2016	School of Computer Science, College of Management Academic Studies	Colloquium	Ethernet Transport Network

9. Scholarships, Awards and Prizes

1. 1997, Rector's Summa Cum Laude Awards, *Ben-Gurion University of the Negev*
2. 1998, Rector's Summa Cum Laude Awards, *Ben-Gurion University of the Negev*
3. 1999, Rector's Summa Cum Laude Awards, *Ben-Gurion University of the Negev*
4. 2000, Award for Excellence, *Communication Systems Engineering, Ben-Gurion University of the Negev*
5. 2010, Summa Cum Laude Award for Research, *Industrial Engineering and Management, Ben-Gurion University of the Negev*
6. 2011, Award for Excellence in Research, *Industrial Engineering and Management, Ben-Gurion University of the Negev*
7. 2012, Award for Excellence in Research, *Industrial Engineering and Management, Ben-Gurion University of the Negev*
8. 2014, Award for Excellence in Research, *Industrial Engineering and Management, Ben-Gurion University of the Negev*
9. 2014, Award for Excellence in Teaching, *School of Computer Science, College of Management Academic Studies*

10. Teaching

a. Courses Taught in Recent Years

Year	Course Name	Type: Lecture/Seminar/Workshop/ High Learn Course/Introduction	Degree	No. of Students
2012 - today	Mobile Operating Systems (iOS)	Lecture	B.Sc.	40
2012 - today	Mobile Operating Systems Seminar	Seminar	B.Sc.	80
2012 - today	Communication Networks	Lecture	B.Sc.	140
2012 - today	Mobile System Programming (Android)	Lecture	B.Sc.	120
2014 - 2020	Object Oriented Programming	Lecture	B.Sc.	80
2012 - 2016	Network Programming Lab	Programming Lab	B.Sc.	40
2014	Object Oriented Software Engineering	Lecture	B.Sc.	80

12. **Professional Experience**

2005 – 2006   Co-Founder, *SQLSwell*
SQLSwell, innovative startup in the database auditing solutions, was involved in the following activities:
- Developing real-time Intrusion detection application for Databases
- Developing auditing solution for Databases
- Reverse engineering of NET8 Protocols
- C++ on windows platform

2006 – 2008   Project manager , *SUNGARD*
Managing the design and development of banking communication systems.
- Managing large scale, core projects of SunGard
- Managing a team of 7 developers
- Managing offshore developers in Belgium and India
- Developing in Java, C, C++, Corba, SQL, ORACLE
- Platforms: Solaris, AIX, Windows
- Integration with Legacy systems

2008 – 2009   Consultant, *LiveU*
Designing and developing liveU's application.
- Architecture, Design & Implementation of LiveU application
- Cellular application for broadcasting live high quality video
- C++ on windows platform
- Designing proprietary communication protocol for high quality channel with low latency over multiple cellular channels using UDP and FEC mechanisms.

2014 – 2019   Co-Founder, *Sports Sidekick*
Sports fans social network platform which got 3MGBP first round funding.

PUBLICATIONS

A. Ph.D. Dissertation

Menachi E., "Ethernet Transport Networks", PhD dissertation, Ben-Gurion University in the Negev, 2014, 112 pages, English, supervised by Prof. Ran Giladi.

B. Other Scientific Publications:
Published

1. Berechya, D., Vershkof, I., Giladi, R., **Menachi, E.**, Avin, C., Porat, H., Kantola, R., Louma, M., Lamminen, O-P., 2008, "WP2 Network Architecture", ICT-ETNA Report D2.1, European Community's 7th Framework Program [FP7/2007-2013] Ethernet Transport Network Architecture (ETNA) grant 215462, http://www.ict-etna.eu/documents/ETNA%20WP2%20Network%20and%20Service%20Architecture%20-%20D2.1%20R2%20-%20Issue%202.pdf

2. Giladi, R., **Menachi, E.**, 2008, "WP3 Simulation and Prototyping goals, requirements and models", ICT-ETNA Report D3.1, European Community's 7th Framework Program [FP7/2007-2013] Ethernet Transport Network Architecture (ETNA) grant 215462, http://www.ict-etna.eu/documents/ETNA_D3_2_simulation_package_v1_1.pdf

3. Giladi, R., **Menachi, E.**, 2009, "WP3 Simulation Package - Guidance", ICT-ETNA Report D3.2, European Community's 7th Framework Program [FP7/2007-2013] Ethernet Transport Network Architecture (ETNA) grant 215462, http://www.ict-etna.eu/documents/ETNA_D3_2_simulation_package_v1_1.pdf

C. Articles in Refereed Journals

Published

1. **E. Menachi** and R. Giladi, "End-to-End Flexible Transport Service Provisioning in Inter-CSP Environment", *IEEE Communication Magazine*, vol. 48, no. 8, August 2010, pp. 118-125 (I.F. 5.12, 3 quotes, rank: A).

2. **E. Menachi**, C. Avin and R. Giladi, "Scalable, Hierarchical, Ethernet Transport Network Architecture (HETNA)", *Journal of Telecommunication Systems,* Vol. 49, No. 3, pp. 299-312, 2012 (I.F 0.822, 4 quotes, rank: B).

3. **E. Menachi** and R. Giladi, "Hierarchical Ethernet Transport Network Architecture for backhaul cellular networks", *Wireless Networks Journal*, DOI 10.1007/s11276-013-0578-9, 2013 (I.F. 1.006, 2 quotes, rank: B).

D. Articles in Conference Proceedings

Published

1. Giladi, R. and **Menachi, E.**, 2009, "ETNA's Service Layer Architecture for Automatic Provisioning of Inter-Domain Ethernet Transport Services", 2009 IEEE GLOBECOM workshop on Below IP Networking (BIPN2009), Honolulu, Hawaii (acceptance rate 34.8%, 1104 out of 3200 papers)

2. **Menachi, E.** and Giladi, R., 2010, "A Service Layer for Providing Inter-CSP Transport Services", Networking and Electronic Commerce Conference (NEAC2010), Riva-del-Garda, Italy

3. Giladi, R. **Menachi, E**., 2020, "Validating Aircraft Noise Models", Proceedings 59, no. 1: 12. https://doi.org/10.3390/proceedings2020059012

E. Other Publications

1. 2001, Giladi, R., Shurman, M., Feldman, M., Gang, S., Kfir, Z., Turkel, I., **Menachi, E.**, Weinraub, Y., "Information Retrieval System", Israel Patent No. 141599

2. 2001, Giladi, R., Turkel, I., Kfir, Z., Gang, S., Moskovich, R., Levy, E., Shurman, M. **Menachi, E.**, "Tree Search Unit", Israel Patent No. 145040 (3 quotes)

3. 2002, Levy, E., Kfir, Z., Kaplan, Y., Ben-Eliahu, R., Turkel, I., Moskovich, R., **Menachi, E.**, Giladi, R., Gang, S., Shurman, M., "Dynamic Information Retrieval System", US Patent No. 60/359,247

4. 2002, Turkel, I., Moskovich, R., Levy, E., **Menachi, E.**, Kfir, Z., Giladi, R., Gang, S., Weinraub, Y., Shurman, M. "Information Retrieval System", World Patent No. PCT/WO 02/067145/A2

5. 2002, Turkel, I., Moskovich, R., Levy, E., **Menachi, E.**, Kfir, Z., Giladi, R., Gang, S., Weinraub, Y., Shurman, M., "Query Resolution System", World Patent No. PCT/WO 02/067146/A2 (16 quotes)

6. 2003, Levy, E., Kfir, Z., Kaplan, Y., Ben-Eliahu, R., Turkel, I., Moskovich, R., Menachi, E., Giladi, R., Gang, S., Weinraub, Y., Shurman, M., "Adaptive acceleration of retrieval queries", US Patent No. 10/347,033 (61 quotes)

F. Summary of My Research Activities and Future Plans

Ethernet technology is not inherently scalable, and yet Ethernet dominates LANs (Local Area Networks), and recently has diffused to access, aggregation networks, and MANs (Metro Area Networks). Ethernet is even considered for transport networks in the backbone. Many solutions from IEEE (the Institute of Electrical and Electronics Engineers, IETF (the Internet Engineering Task Force), and MEF (the Metro Ethernet Forum) are considered for enabling Ethernet beyond LANs and bridged LANs. However, Ethernet addressing and forwarding mechanisms restrict Ethernet from being fully scalable, and confine it mainly to home and enterprise networks. This is due to the use of "flat" Ethernet MAC (Media Access Control) addresses, which leads to the need to store and maintain all MAC addresses in every forwarding node, broadcasting frames

with unknown addresses and flooding the network with ARP (Address Resolution Protocol) requests. Ethernet also lacks some basic networking capabilities that are required in contemporary networks, certainly in the aggregation, metro, and transport networks, e.g., mobility and QoS (Quality of Service) support.

My research aimed to overcome the deficiencies of traditional Ethernet and complement Ethernet lack in functionality to enable the use of Ethernet in complex and demanding network infrastructures.

Specifically:

In large networks such as large organizations, data centers, wireless backhauls etc., we aim to overcome the scalability issues, while maintaining Ethernet simplicity and frame structure, without affecting the end point devices in the network.

In transport networks we complement Ethernet lack of QOS and OAM, and enable transport services while using standard Ethernet frames.

In high throughput networks such as Data centers we aim to provide Traffic Engineering which will increase the network throughput and better utilize the available network resources.

In my research I present a Hierarchical Ethernet Transport Network Architecture (HETNA). A network infrastructure that provides scalability, mobility, protection, and QoS support in an efficient forwarding manner. In addition, my research deals with data centers and cellular backhauls networks, adaptive routing for high throughput networks solutions and NFV and SDN infrastructures.