

CURRICULUM VITAE

Personal Details

Tirza Cherlow-Routtenberg
Department of Electrical and Computer Engineering
Ben-Gurion University, Beer Sheva 84105 Israel, Tel. +972-8-6461534

Education

B.Sc.

2000-2004 - Bio-Medical Engineering, Technion – Israel Institute of Technology.
Degree received: B.Sc. (Cum Laude), March 2005.

M.Sc.

2005-2007 - Electrical and Computer Engineering, Ben-Gurion University of the Negev.
Title of Master's thesis: "MIMO-AR Blind Source Separation for GMM Distributed and Finite Alphabet Signals" Advisor: Prof. J. Tabrikian.
Degree received: M.Sc. (Cum Laude), June 2008.

Ph.D.

2008-2012 - Electrical and Computer Engineering, Ben-Gurion University of the Negev.
Title of Doctoral dissertation: "Parameter Estimation under Arbitrary Cost Functions with Constraints." Advisor: Prof. J. Tabrikian.
Degree received: Ph.D. April 2013.

Employment History

October 2014 – Present: Senior lecturer ((equivalent to a US Assistant Professor),
Electrical and Computer Engineering, Ben-Gurion University of the Negev.

April 2012- August 2014: Postdoctoral researcher
School of Electrical and Computer Engineering, Cornell University.
Research title: "Signal Processing for Smart Grid."

2005-2012: Tutor, Teaching Assistant, and Lab Instructor
Electrical and Computer Engineering, Ben-Gurion University of the Negev.

2004-March 2005: Research Assistant
Laboratory of Neurosciences, Felsenstein Medical Research Center,
Sackler Faculty of Medicine, Tel Aviv University.

Professional Activities

1. Co-organizer of special session on "Statistical Signal Processing for Smart Grid Applications" in *ICASSP 2019* (accepted), Brighton, UK.
2. Co-organizer of special session on "Signal Processing and Control Theory for Smart Grids" in *DSP 2017*, London, UK.
3. Program Committee (TPC) member at: European Signal Processing Conference (EUSIPCO), 2015-2018, IEEE International Conference on Digital Signal Processing (DSP), 2017, Symposium on Information Processing and Optimization for Smart Grids under IEEE GlobalSIP, 2017, Symposium on Information Processing, Learning and Optimization for Smart Energy Infrastructures under IEEE GlobalSIP, 2018, IEEE Workshop on Statistical Signal Processing (SSP 2018).
4. 2011-2013: Chair of the student subcommittee of the IEEE Sensor Array and Multichannel Technical Committee (SAM-TC).
5. Reviewer of scientific journals: IEEE Trans. on Signal Processing, IEEE Trans. Information Theory, IEEE Trans. on Power Systems, IEEE Signal Processing Letters, Signal Processing, IEEE Trans. on Signal and Information Processing over Networks, IEEE Journal on Selected Areas in Communications, IEEE Journal of Selected Topics in Signal Processing.

6. Reviewer of conference papers: Sensor Array and Multichannel Signal Processing Workshop (SAM), International Symposium on Information Theory (ISIT), International Conference on Acoustics, Speech and Signal Processing (ICASSP), The European Signal Processing Conference (EUSIPCO), PES Innovative Smart Grid Technologies Conference (ISGT), Symposium on Information Processing and Optimization for Smart Grids (GlobalSIP), International Conference on Digital Signal Processing (DSP).

(a) Membership in professional/scientific societies

1. Membership in professional societies:

- IEEE membership: Senior Member (since 2018), Member (since 2012), Student Member (2007-2012).
- IEEE Signal Processing Theory and Methods (SPTM) Technical Committee Member (elected for a 3-year term starting from January 2018).
- BGU Cyber Security Research Center member (since 2017)
- IEEE Power & Energy Society Member (since 2015)
- IEEE Signal Processing Society member (Since 2011)
- IEEE Women in engineering member (Since 2011)

Educational activities

(a) Courses taught

1. Introduction to Optimization – Undergraduate, Electrical and Computer Engineering
2. Introduction to Signal Processing – Undergraduate, Electrical and Computer Engineering
3. Signal Processing and Optimization for Electric Power Systems- graduate, Electrical and Computer Engineering

(b) Supervision research students

Alumni post-docs

1. Dr. Elisabeth Drayer (Post Doc researcher, April 2018-August 2019)
2. Dr. Eyal Nitzan (Oct. 2018- July 2019)

Graduated Ph.D. students:

1. Eyal Nitzan (jointly supervised with Prof. J.Tabrikian), "Estimation Theory with Side Information for Periodic and Constrained Problems".

Graduated M.Sc. students:

1. Nadav Harel "Non-Bayesian Estimation with Parameter Selection and Quantization". 2017-2018
2. Elad Meir, "Estimation After Model Selection". 2017-2018
3. Sivan Grotas "Blind Source Separation in Graphs with Applications to Electrical Networks and Cyber Security". 2018-2019.

Current group

3. Nadav Harel (Ph.D. student, combined track), "Non-Bayesian Estimation with Parameter Selection and Quantization". Expected graduation date: October 2022.
4. Gal Morgenstern (Ph.D. student, combined track), "Post-Detection Estimation: Theory and Methods". Expected graduation date: October 2023.
5. Shir Cohen (M.Sc. student, direct track) Expected graduation date: March 2020
6. Eyal Levy (M.Sc. student) Expected graduation date: March 2020
7. Shlomit Shaked (M.Sc. student) Expected graduation date: October 2020
8. Itai Eliyahu Berman (M.Sc. student) Expected graduation date: October 2020
9. Ariel Kroizer (M.Sc. student, direct track) Expected graduation date: October 2020
10. Neta Zimmerman (M.Sc. student, jointly supervised by Dr. J. Rosenblatt), "*Seismic Wave Direction of Arrival Estimation in a Correlated Noise Environment*", Expected graduation date: October 2020

11. Lital Dabush (M.Sc. student, direct track) Expected graduation date: October 2021
12. Tاعر Weiss (M.Sc. student, Tel Aviv University, jointly supervised by Prof. H. Messer-Yaron) Expected graduation date: October 2021

Supervision of ~ 35 B.Sc. students in their final projects:

- The students Yair Cohen and Almog Salman (jointly supervised with Prof. Raul Rabinovici) won the 2016 scholarship of “The Society of Electrical and Electronics Engineers in Israel”:
- Three supervised students won the ECE department’s Outstanding Projects for 2016: Nadav Harel, Yair Cohen and Almog Salman, (jointly supervised with Prof. Raul Rabinovici), Dolev Perets, (jointly supervised with Prof. Ilan Shalom).

Awards, Citations, Honors, Fellowships

1. 2001-2004 - “Dean's Award for Excellence” (3 semesters of B.Sc. studies) , Technion – Israel Institute of Technology.
2. 2005 – Technion – Israel Institute of Technology, B.Sc. (cum laude).
3. 2007 - Ben-Gurion, M.Sc. (cum laude).
4. 2008 - Best Tutor of the ECE Dept. for fall semester, 2008.
5. 2008 - Yaakov ben-Yitzhak Hacohen Excellence Scholarship, Ben-Gurion University of the Negev. 2008-2011: Negev Scholarship for Outstanding Ph.D. Students.
6. 2010-2012: Lev-Zion Scholarship for Excellent Ph.D. Students (10 awardees in Israel annually in all disciplines).
7. 2009 - Best Tutor the ECE Dept. for fall semester, 2009.
8. 2010 - Distinguished Tutor of the ECE Dept. for 2010 fall semester, 2010.
9. May 2011 – Travel Grant - IEEE International Conference on Acoustic, Speech and Signal Processing (ICASSP 2011), Prague.
10. May 2011 – Best Student Paper Award - IEEE International Conference on Acoustic, Speech and Signal Processing (ICASSP2011), Prague, (6 awards out of 659 candidates).
11. 2012-2013: Post-doctoral fellowship by Marc Rich Foundation Prize.
12. 2013-2014: Post-doctoral fellowship of the School of Electrical and Computer Engineering, Cornell.
13. Feb. 2013 – The Feder Family Award for Best Student Work in Communications
14. Sept. 2013 – Best Student Paper Award (coauthor) – CAMSAP 2013, St. Marteen
15. Mar. 2017 – Best Student Paper Award (coauthor) – IEEE International Conference on Acoustic, Speech and Signal Processing (ICASSP2017), New Orleans.
16. May 2018 – Best Student Paper Award (coauthor) – IEEE Workshop on Statistical Signal Processing (SSP 2018), Freiburg, Germany.
17. Outstanding Reviewer Award, *IEEE International Conference on Acoustic, Speech and Signal Processing (ICASSP 2019)*, Brighton, United Kingdom.
18. 2019 - Excellence in Teaching Award of the ECE department, 2019.

Research Grants

1. Individual Research Grant, ISRAEL SCIENCE FOUNDATION (ISF), grant No. 1173/16 “Multistage Adaptive Estimation and Detection after Parameter Selection”, 2016-2020, annual amount 77,168\$, total amount of 293,000\$.
2. New-Faculty Equipment Grant, ISRAEL SCIENCE FOUNDATION (ISF), grant No. 2395/16, “Equipment for the Laboratory of Signal Processing and Optimization with Smart Grid” 2016, total amount of 30,800\$.
3. BGU Cyber Security Research Center for research grant on “Cyber Security for Smart Grids,” 2018-2019, annual amount 57,000\$, total amount of 114,000\$.

4. Ministry of defense – MAFAT, research grant on “Detection of Cyber Attacks and Changes in Power Systems”, annual amount 55,000\$, 2019.
5. Israel Ministry of National Infrastructure, Energy and Water Resources for research on “State Estimation and Attack Detection in Smart Grids”, 151,500\$, 2019-2021.
19. The Fund for Research Promotion of the Faculty of Engineering, Ben-Gurion University of the Negev, 5,750\$, 2019.
20. Data Science Research Center grant, Ben-Gurion University of the Negev, “Seismic Wave Direction of Arrival Estimation in a Correlated Noise Environment”, annual amount 25,500\$, 2020 (jointly with Dr. J. Rosenblatt).

• **Research Grants with students**

1. Israel Ministry of National Infrastructure, Energy and Water Resources, for the student Lital Dabush on her M.Sc. research on “Detection methods in partially observable power systems”, annual amount 14,126\$, total amount of 28,252\$, 2020-2021.
2. Israel Ministry of National Infrastructure, Energy and Water Resources, for the student Neta Zimmerman on her M.Sc. research on “Seismic Wave Direction of Arrival Estimation in a Correlated Noise Environment”, annual amount 14,126\$, total amount of 14,126\$, 2020.
3. Israel Ministry of Science, for the student Gal Morgenshtern on his Ph.D. research on “System Design with Post-detection Estimation”, annual amount 36006\$, total amount of 132501\$, 2020-2023.
4. Israel Ministry of National Infrastructure, Energy and Water Resources, for the student Shlomit Shaked on her M.Sc. research on “Detecting and Evaluating Cyber Attacks in Smart Grids”, annual amount 14,126\$, total amount of 28,252\$, 2019-2020.
5. Israel Ministry of Science, for the student Sivan Grotas on her M.Sc. research on “Graph Blind Source Separation with Application to Power Systems”, annual amount 7,063\$, total amount of 14,126\$, 2018-2019.
6. Israel Ministry of Science, for the student Shir Cohen on her M.Sc. research on “Non-Bayesian Parameter Estimation of the Unseen,” annual amount 14,126\$, total amount of 28,252\$, 2019-2020.