

PUBLICATIONS December 2024

Thesis and Dissertation

M.Sc. *Asymptotic Solution of Wave Propagation Problems in Slender Bodies of Revolution*, Supervisor: B. Rulf

Ph.D. *The Displacement due to Wave Propagation from a Finite Source in a Layered Elastic Solid*, Supervisor: F. Abramovitz

Open University Books (Hebrew)

Mathematics

- 1981 Introduction to differential equations – with Prof. Eli Levin.
- 1981 Numerical computation (adapted form OU English version) – development coordinator
- 1983 -1986 Calculus III – writing 6 units, and development coordinator.

Computer Science

academic responsibility and development coordinator.

- 1986 Introduction to Computer Science using Pascal
- 1988 Numerical Computation
- 1988 Computer Organization and Programming
- 1988 Digital Design (translation and study guide)
- 1989 Numerical Methods for Ordinary Differential Equations
- 1990 Prolog and Artificial Intelligence (study guide)
- 1990 Introduction to System Programming with C (study guide)
- 1991 Automata Theory and Formal Languages – rewriting
- 1991 Algorithmics: The foundations of Computer Science
- 1998 Data Structures and Introduction to Algorithms
- 1998 Topics in Computer Science Education – reader editing, study guide, teaching.
- 1998 Computational Models for High-Schools
- 1999 Computer Organization for High-Schools
- 1999 Computer Organization and Programming
- 2000 Introduction to Computer Science
- 2002 Topics in Computer Science Education (revised) –
- 2008 Algorithmics: The Foundations of Computer Science
- 2008 Data Structures and Introduction to Algorithms - a different new version based on the text book,
- 2008 Digital Design
- 2014 Algorithmics: The Foundations of Computer Science – development coordinator course.
- 2014 Topics in Computer Science Education (updated)
- 2014 Workshop – Pedagogical Aspects of CS Education

Selected Articles in Refereed Journals

Published

1. Rulf & J. Gal-Ezer, "High Frequency Waves in Thin Bodies of Revolution", *Journal of Sound and Vibration*, 1972, **21**, pp. 1-10.
2. F. Abramovici & J. Gal-Ezer, "Numerical Seismograms for a Vertical Point-Force in a Layered Solid", *Bull. Seism. Soc. Am.*, 1978, **68**, pp. 81-101.
3. F. Abramovici & J. Gal-Ezer, "Seismic Waves from Finite Faults in Layered Media", *Bull. Seism. Soc. Am.*, 1979, **69**, pp. 1693-1714.
4. F. Abramovici, J. Gal-Ezer & J. Baumgarten, "A Method for Extracting Phase Velocity Curves from Seismograms", *Geophys. J. R. Astr. Soc.*, 1981, **65**, pp. 727-739.
5. J. Gal-Ezer & G. Zwas, "An Algorithmic Approach to Linear Systems", *Int. J. Math. Educ. Sci. Technol.*, 1984, **15**, 4, pp. 501-519.
6. J. Gal-Ezer & G. Zwas, "Convergence Acceleration as a Computational Assignment", *Int. J. Math. Educ. Sci. Technol.*, 1987, **18**, 1, pp. 15-28.
7. J. Gal-Ezer & G. Zwas, "The Computational Potential of Rational Approximations", *Computers and Education*, 1987, **11**, pp. 33-46.
8. J. Gal-Ezer & G. Zwas, "Computational Aspects of Rational vs. Polynomial Interpolation", *Int. J. Math. Educ. Sci. Technol.*, 1988, **19**, 4, pp. 567-579.
9. S. Breuer, J. Gal-Ezer & G. Zwas, "Microcomputer Laboratories in Mathematics Education", *Computers and Mathematics*, 1990, **19**, 3, pp. 13-34.
10. J. Gal-Ezer & G. Zwas, "Error Bounds for Interpolative Approximations", *Mathematics and Computer Education*, 1990, **24**, 3, pp. 198-212.
11. J. Gal-Ezer & G. Zwas, "Real World Models in the Teaching of Calculus", UMAP: *J. Undergraduate Mathematics and its Application*, 1992, **13**, 2, pp. 93-100.
12. J. Gal-Ezer & G. Zwas, "Corrected Summation of Alternating Series", *Int. J. Math. Educ. Sci. Technol.*, 1993, **24**, pp. 171-176.
13. J. Gal-Ezer & G. Zwas, "A Teachable Derivation of Asymptotic Error Expansions for Numerical Integration", *Mathematics and Computer Education*, 1994, **28**, 3, pp. 303-313.

14. J. Gal-Ezer, "Computer Science Teachers' Certification Program", *Computers and Education*, 1995, **25**, 3, pp. 163-168.
15. J. Gal-Ezer, C. Beerli, Harel & A.Yehudai, "A High-School Program in Computer Science", *Computer*, 1995, **28**, 10, pp. 73-80, cit.142.
16. T. Rosenthal, J. Gal-Ezer & N. Ben-Zvi, "Professional Updating and Computer Training for Immigrants: A Case Study", *GATES*, 1995, **2**, 1, pp. 26-32.
17. J. Gal-Ezer, "A Pre-Programming Introduction to Algorithmics", *Mathematics and Computer Education*, 1996, **30**, 1, pp. 61-69.
18. J. Gal-Ezer & O. Lichtenstein, "A Mathematical-Algorithmic Approach to Sets: A Case Study", *Mathematics and Computer Education*, 1997, **31**, 1, pp. 33-42.
19. J. Gal-Ezer & D. Harel, "What (else) should CS educators know?", *Communications of the ACM*, 1998, **41**, 9, pp. 77-84, cit. 130
20. C. Stephenson, J. Gal-Ezer, C. Rice & C. Wolf, "Revitalizing High School Computer Science: Finding Common Ground", *Journal of Computer Science Education*, 1998, **12**, 1&2, pp. 8-17.
21. J. Gal-Ezer & D. Harel, "Curriculum and Course Syllabi for High-School Computer Science Program", *Computer Science Education*, 1999, **9**, 2, pp. 114-147, cit. 81.
22. J. Gal-Ezer & A. Zeldes, "Teaching Software Designing Skills", *Computer Science Education*, 2000, **10**, 1, pp. 25-38, cit:33.
23. J. Gal-Ezer & D. Lupo, "Integrating Internet tools into traditional CS distance education: Students' attitudes", *Computers and Education*, 2002, **38**, 4, pp. 319-329, cit: 71
24. J. Gal-Ezer & E. Zur, "The Efficiency of Algorithms – Misconceptions", *Computers and Education*, 2004, **42**, 3, pp. 215-226, cit: 60
25. J. Gal-Ezer, T. Vilner & Zur, "Teaching Efficiency at CS1 Level: A different approach", *Computer Science Education*, 2004, 14, 3, pp. 235-248.
26. Z. Erlich, J. Gal-Ezer & I. Erlich, "Skills required for participating in CMC courses: An empirical study", *Computers and Education*, 2005, 44, 4, pp. 477-487.
27. M. Armoni & J. Gal-Ezer, "Teaching Reductive Thinking", *Mathematics and Computer Education*, 2005, **39**, 2, pp. 131-142.

28. M. Armoni, J. Gal-Ezer & Tirosh, "Solving Problems Reductively", *Journal of Educational Computing Research*, 2005, 32, 2, pp. 113-129.
29. M. Armoni & J. Gal-Ezer, "Introducing Non-Determinism", *Journal of Computers in Mathematics and Science Teaching*, 2006, **25**, 4, pp. 325-359.
30. J. Gal-Ezer & H. Habiballa, "A Unique high-school curricula for informatics for grammar schools in Israel", Czech journal, *MFI Matematika-Fyzika-Informatika*, 2006, **16**, 2, pp. 104-113.
31. M. Armoni, J. Gal-Ezer & O. Hazzan, "Reductive Thinking in Computer Science", *Computer Science Education*, 2006, **16**, 4, pp. 281-301.
32. M. Armoni & J. Gal-Ezer, "Non-determinism: An Abstract Concept in CS Studies", *Computer Science Education*, 2007, **17**, 4, pp. 243-262.
33. J. Gal-Ezer & E. Zur, "Reaching Out to CS Teachers: Certification via Distance Learning", *Mathematics and Computer Education*, 2007, **41**, 3, pp. 250-265.
34. J Gal-Ezer, T Vilner, E Zur, "Once she makes it, she's there!: a case study", *Computer Science Education* 18 (1), 17-29.
35. J. Gal-Ezer & C. Stephenson, "The Current State of Computer Science in U.S. High Schools: A Report from Two National Surveys", *Journal for Computing Teachers*, 2009,
http://www.iste.org/Content/NavigationMenu/Membership/SIGs/SIGCS_Computer_Science_/JCTJournalforComputingTeachers/PastIssues/2009/Spring/JCT_Spring_2009.htm
36. J. Gal-Ezer, T. Vilner & E. Zur, The Professor on Your PC: A Virtual CS1 Course, *Inroads SIGCSE Bulletin*, 2009, **41**, 3, pp.191-195.
37. J. Gal-Ezer, D. Shahak & E. Zur, Computer Science Issues in High school: Gender and more..., *Inroads SIGCSE Bulletin*, 2009, **41**, 3, pp. 278-282.
38. O. Hazzan, J. Gal-Ezer, & N. Ragonis, How to establish a Computer Science Teacher Preparation Program at your University, The ECSTPP Workshop, *ACM Inroads Magazine*, 2010, **1**, 1, pp. 35-39.
39. J. Gal-Ezer, & C. Stephenson, Computer Science Teacher Preparation is Critical, *ACM Inroads Magazine*, 2010, **1**, 1, pp. 61-66.
40. Z Fraiman, **J. Gal-Ezer**, E. Kanel, & T. Lapidot, An Israeli-Russian Collaboration of Ideas, *ACM Inroads Magazin*, 2013, **4**, 3, pp. 76-81.

41. J. Gal-Ezer, & C. Stephenson, A Tale of Two Countries: Successes and Challenges in K-12- Computer Science Education in Israel and the United States, *ACM Transactions on Computing Education*, 2014, **14**, 2.
42. M. Armoni & J. Gal-Ezer, High School Computing Education Paves the Way for Higher Education and Assists in Closing the Equity Gap – the Israeli Case, *Computer Science Education*, 2014, **24**, 3.
43. M. Armoni & J. Gal-Ezer, Early Computing Education – Why? What? When? Who?, *ACM Inroads Magazine*, 2014, **5**,4, pp. 54-59
44. J. Gal-Ezer & M. Trakhtenbrot, Identification and addressing reduction-related misconceptions, *Computer Science Education*, 2016.
DOI:10.1080/08993408.2016.1171470
<http://dx.doi.org/10.1080/08993408.2016.1171470>
45. J. Gal-Ezer & M. Trakhtenbrot, Reduction Patterns – A Practical Tool for Proving Undecidability, *Proceedings of ITiCSE'16*, 2016, Arequipa, Peru, ACM 978-1-4503-4231-5/16/07.
<http://dx.doi.org/10.1145/2899415.2925478>
46. M.E. Caspersen, J. Gal-Ezer, A. McGettrick & E. Nardelli. Informatics as a Fundamental Discipline for the 21st Century, *Communications of the ACM*, 2019, **62**, 4. DOI: 10.1145/3310330
47. A. Cohen, S. Dolev & J. Gal-Ezer. The journey of computer science and software engineering in Israeli schools *ACM Inroads*, 2022, **13**, 3, pp 29–37. DOI: 10.1145/3556879
48. M. Armoni & J. Gal-Ezer. High-School Computer Science – Its Effect on the Choice of Higher Education, *Informatics in Education*, 2023. DOI: 10.15388/infedu.2023.14.
49. M. Caspersen, J. Gal-Ezer, A. McGettrick & E. Nardelli. Informatics Education for School – A European Initiative, *ACM Inroads*, 2023, **14**,1, pp.49-53. DOI: 10.1145/3583088
50. D. Zohar and J. Gal-Ezer, Navigating to Tomorrow's HighTech Landscape: a Path based on the Israeli Case, *ACM Inroads*, 2023, **14**, 4, pp. 51–56, DOI: 10.1145/3630606.
51. J. Gal-Ezer & S. Szekely. Spark: The First Choice for Novices. *Informatics in Education*, 2024, **23**, 4, pp. 719-721.
<https://doi.org/10.15388/infedu.2024.26>
52. McGettrick, A., Caspersen, M. E., Gal-Ezer, J., & Nardelli, E. (2024). European Digital Transformation Needs Indicators of Informatics Competence, *ACM Inroads*, **15**, (4), pp. 74-81.
<https://doi.org/10.1145/3696791>

53. J. Gal-Ezer, D. Zohar and A. Rolnik. International Science Olympiads: The Israeli *Teams, Olympiads in Informatics*, 2025, **19**, pp. 45-60.
DOI: 10.15388/ioi.2025.

Under Review

1. Ofer Wald, Judith Gal-Ezer, under review.
2. Ofer Wald, Judith Gal-Ezer, under review.

Selected Articles in Conference Proceedings

1. J. Gal-Ezer & G. Zwas, "The Construction of Library Functions in High School Mathematics", *Abstracts of the Second International Jerusalem Convention on Education*, 1989.
2. T. Rosenthal, J. Gal-Ezer & N. Ben-Zvi, "Professional Updating and Computer Training for Immigrants: A Case Study", WCCE (*Sixth IFIP World Conference Computers in Education*), Birmingham, 1995.
3. M. Daniels, J. Gal-Ezer, I. Sanders & J. Teague, "Teaching Computer Science: Experience from Four Continents", *The Proceedings of the Twenty-Seven SIGCSE Technical Symposium on Computer Science Education*, 1996, pp. 102-106.
4. J. Gal-Ezer & E. Zur, "Teaching Efficiency in High School", *FIE (Frontiers in Education) 2002, Proceedings*: <http://fie.engrng.pitt.edu/fie2002/>
5. J. Gal-Ezer, T. Vilner & E. Zur, "Characteristics of Students who Failed (or succeeded) in the Introductory CS Course", *FIE 2003, Proceedings*: <http://fie.engrng.pitt.edu/fie2003/>
6. M. Armoni & J. Gal-Ezer, "Non-Determinism in CS High-School Curricula", *FIE 2003, Proceedings*: <http://fie.engrng.pitt.edu/fie2003/>
7. J. Gal-Ezer & D. Lanzberg, "Using Synchronous and Asynchronous Online Learning in Computer Science Courses", work in progress, *FIE 2003, Proceedings*: <http://fie.engrng.pitt.edu/fie2003/>
8. J. Gal-Ezer & M. Trakhtenbrot, "Use of Visual tools in Distance Teaching of Computational Models", *FIE 2003, Proceedings*: <http://fie.engrng.pitt.edu/fie2003/>

9. M. Armoni & J. Gal-Ezer, "On the Achievements of High School Students Studying Computational Models", *Proceedings of the 9th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education*, 2004, **36**, 3, pp. 17-21.
10. J. Gal-Ezer, D. Lanzberg & D. Shahak, "Introducing Undecidability", Tips and Techniques, *Proceedings of the 9th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education*, 2004, **36**, 3, p. 276.
11. J. Gal-Ezer, D. Lanzberg & D. Shahak, "Interesting Basic Problems for CS1", Tips and Techniques, *Proceedings of the 9th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education*, 2004, **36**, 3, p. 275.
12. M. Armoni, J. Gal-Ezer & O. Hazzan, "Reductive Thinking in Undergraduate CS Courses", *Proceedings of the 11th annual ITiCSE Conference on Innovation and Technology in Computer Science Education*, 2006, **38**, 3, pp.133-137.
13. J. Gal-Ezer & M. Trakhtenbrot, "Technology in Distance Teaching of Computational Models", *Proceedings of the 5th International Conference on Education and Information Systems, Technologies and Applications: EISTA2007*, **2**, pp. 54-59.
14. J. Gal-Ezer, "Computer Science in High-Schools: Curricula and Research", A. Jimoyiannis (ed.), *Proceedings of the 3rd Panhellenic Conference on Computer Science Education*, 2006, pp. 3-12, Korinthos, Greece.
15. T. Vilner, E. Zur, & J. Gal-Ezer, "Fundamental Concepts of CS1: Procedural vs. Object Oriented Paradigm: A Case Study", *Proceedings of the 12th Annual ITiCSE Conference on Innovation and Technology in Computer Science Education*, 2007, **39**, 3, pp. 171-175.
16. Zur, T. Vilner & J. Gal-Ezer, "Space Complexity in CS1", *Proceedings of IEEE Informatics Education Europe II, Greece*, November 2007, 126-135.
17. O. Hazzan, J. Gal-Ezer & L. Blum, "A Model for High School Computer Science Education: The Four Key Elements that Make It!" *Proceedings of The 39th Technical Symposium on Computer Science Education, SIGCSE*, 2008, pp. 281-285. (Appears as *Inroads, SIGCSE Bulletin*, 2008, **40**, 1, pp. 281-285.

18. J. Gal-Ezer, T. Vilner, & E. Zur, "The Professor on Your PC: a Virtual CS1 Course", *Proceedings of FIE* <http://fie-conference.org/fie2008/2008>.
19. J. Gal-Ezer, T. Vilner, & E. Zur, Is the Paradigm Shift in CS1 Harmful: A Case Study, *The 40th Technical Symposium on Computer Science Education, SIGCSE*, Chattanooga, TN. 2009.
20. N. Ragonis, O. Hazzan & J. Gal-Ezer, A survey of Computer Science Teacher Preparation Programs in Israel tells us: Computer Science deserves a designated high school teacher preparation! *Proceedings of SIGCSE 2010 -- The 41st ACM Technical Symposium on Computer Science Education*, Milwaukee, pp. 401-405.
21. S. Cooper, B. Owens, C. Stephenson, & J. Gal-Ezer, The New CSTA K-12 Standards, *ITiCSE2012*, Haifa, 2012.
22. J. Gal-Ezer, Challenges in Computer Science Education, *Proceedings WiPSCE2012*, Keynote paper, 2012.
23. J. Gal-Ezer, T. Vilner, & E. Zur, Examining at a Distance - how does it work?, *The Joy of Learning – EDEN Annual Conference Proceedings*, 2013, pp. 615-623.
24. J. Gal-Ezer & E. Zur, "What (else) should CS educators know? – revisited", *WiPSCE'13 Proceedings of the 8th Workshop in Primary and Secondary computing Education*, ACM 2013, pp. 83-86,
25. J. Gal-Ezer, R. Marelly & S. Szekely, "Plethora of Skills - Play-Learn-Practice-Invent-Share", *Proceedings ITiCSE '20, June 15–19, 2020*.
<https://doi.org/10.1145/3341525.3393984>
26. M. Armoni, J. Gal-Ezer, M. Haskel-Ittah, R. Marelly, & S. Szekely. Computational Problem solving with Plethora, *Proceeding ISSEP*, 2021.
<https://issep2021.science.ru.nl/wp-content/uploads/2021/11/Computational-Problem-Solving-with-Plethora.pdf>
27. O. Wald, J. Gal-Ezer, & N. Zaidenberg. Competitive Programming as a source for problems and tools in CS1. *Proceedings of the 21th Chais conference for Study of innovations and Learning Technologies*, 2026.

Chapters in Books (Invited Articles in Refereed Books)

1. J. Gal-Ezer, "Will ODL undergo major changes in the next millennium?", *Towards Virtualization: Open and Distance Learning*, V. Venugopal Reddy

- and Manjulika, S. (eds.), Kogan Page India Pvt. Ltd., New Delhi, India, 2002.
2. Z. Erlich, J. Gal-Ezer & D. Lupo, "Traditional Distance Education vs. Technology-Integrated Distance Education", *Intelligent Internet Based Teaching and Learning*, Ch. 2, L.C. Jain & R.J. Howlett (eds.), World-Scientific, 2002, **2**, pp. 41-74.
 3. Z. Erlich, & J. Gal-Ezer, "The Open University of Israel – A Distance Education Institution", In C. Howard, J. Boettcher, L. Justice, P. L. Rogers and G. A. Berg (eds.), *Encyclopedia of Distance Learning*, US: Idea Group Reference, 2005, pp. 1421-1429.
 4. A. Armoni & J. Gal-Ezer. Computer Science Education in Israel. in: *Past, Present and Future of Computing Education Research: A Global Perspective*. CERBOOK. <https://link.springer.com/book/10.1007/978-3-031-25336-2>, 2023.
 5. Informatics for All Reference Framework for School.
<https://www.informaticsforall.org/the-informatics-reference-framework-for-school-release-february-2022/>
 6. M. Armoni, J. Gal-Ezer, D. Harel, R. Marely & S. Szekely. Plethora of Skills: A Game-Based Platform for Introducing and Practicing Computational Problem Solving. In: *Computational Thinking Curricula in K-12: International Implementations*. H. Abelson & K. Siu-Cheung (Eds.), 2024.

Research Reports

1. C. Stephenson, J. Gal-Ezer, B. Haberman & A. Verno. "The New Educational Imperative: Improving High School Computer Science Education", Final Report of the CSTA, Curriculum Improvement Task Force, <http://csta.acm.org/Publications/CSTAWhitePaperNC.pdf>, 2005.
2. Ericson, M. Armoni, J. Gal-Ezer, D. Seehorn, C. Stephenson & F. Tree "Ensuring Exemplary Teaching in an Essential Discipline: Addressing the Crisis in Computer Science Teacher Certification", Final Report of the CSTA Teacher Certification Task Force, <http://www.csta.acm.org/Communications/sub/Documents.html> 2008.
3. F. Gagliardi, C. Hankin, J. Gal-Ezer, A. McGettrick & M. Meitern. "Advancing Cybersecurity Research and Education in Europe: *Major Drivers of Growth in the Digital Landscape*". https://www.acm.org/binaries/content/assets/public-policy/2016_euacm_cybersecurity_white_paper.pdf 2016
4. J. Vahrenhold, E. Nardelli, C. Pereira, G. Berry, M. E. Caspersen, J. Gal-Ezer, M. Kölling, A. McGettrick, & M. Westermeier. *Informatics Education in Europe: Are We All In The Same Boat?* Association for Computing Machinery / Informatics Europe, New York, NY. <https://doi.org/10.1145/3106077> 2017.
5. J. Gal-Ezer, Member of Steering committee Computing Curricula 2020: Paradigms for Global Computing Education, ACM and IEEE /task Force, Co-chairs: A. Clear & A. Parrish, December 2020. <https://www.acm.org/binaries/content/assets/education/curricula-recommendations/cc2020.pdf>
6. M. Caspersen, I. Diethelm, J. Gal-Ezer, A. McGettrick, E. Nardelli, D. Passey, B. Rován and M. Webb., "Informatics References Framework for School", 2022. <https://www.informaticsforall.org/wp-content/uploads/2022/03/Informatics-Reference-Framework-for-School-release-February-2022.pdf>
7. M. Caspersen, I. Diethelm, J. Gal-Ezer, A. McGettrick, E. Nardelli, D. Passey, B. Rován and M. Webb., "Designing and Implementing a Concrete Informatics Curriculum for School", 2022. <https://www.informaticsforall.org/designing-and-implementing-a-concrete-informatics-curriculum-for-school/>

8. M. Caspersen, I. Diethelm, J. Gal-Ezer, A. McGettrick, E. Nardelli, D. Passey, B. Rován and M. Webb., "Building on the Informatics Reference Framework for School" 2023.
<https://www.informaticsforall.org/wp-content/uploads/2023/08/Building-on-the-Informatics-Reference-Framework-for-School-release-January-2023.pdf>
9. Dagstuhl Report <https://doi.org/10.4230/DagRep.14.6.108>
10. E. Nardelli, G. Futschek, J. Gal-Ezer and M. Webb., European survey on requirements for the informatics school curriculum and informatics school teachers' education. <https://www.informaticsforall.org/a-european-survey-on-requirements-for-the-informatics-school-curriculum-and-informatics-school-teachers-education/>, 2025.

Special Sessions, Posters, Bof's, Panels mainly at:

11. The SIGCSE Technical Symposium on Computer Science Education The Annual ITiCSE Conference on Innovation and Technology in Computer Science Education, ISSEP 2021.