TEDDY LAZEBNIK

PERSONAL INFORMATION

Electronic Address: lazebnik.teddy@gmail.com
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Marital Status: Married
Birth Date: 14th July, 1997

PROFESSIONAL SUMMARY

Mathematical models and algorithms researcher (and developer) in the fields of epidemiology, medical, economics, and information systems. Ten years experience in software development in the industry, including five years experience as an algorithm developer with a focus on data-driven algorithms for bio-medical tasks, and AI algorithms for natural language processing, computer vision, and graph-based optimization.

ACADEMIC EDUCATION

Bar-Ilan University 2013 - 2016
B.Sc. in Applied Mathematics

· Final project about "Observable of Discrete - continuous Linear Time Interval Systems with Continuous Time Measurement".

Bar-Ilan University 2017 - 2018
M.Sc. in Applied Mathematics

· Thesis about "Highly Stable Numerical Algorithm for Matrix Exponent" (Hebrew) - supervised by Dr. Shlomo Yanetz.

Bar-Ilan University 2018 - 2021
Ph.D. in Computer Science

· Thesis about "Large Scale Medical Nanoparticles Pharmacokinetics Mathematical Modeling and Simulation" - supervised by Prof. Gal A. Kaminka and Dr. Hana Weitman.

Ariel University 2020 - 2021
Ph.D. in Biomathematics

· Thesis about "Modeling and Numerical Calculation of COVID-19 spread and Optimal Oncology Treatment protocols" - supervised by Dr. Svetlana Bunimovich-Mendrazitsky.

ACADEMIC EMPLOYMENT

Holon Institute of Technology (HIT), Department of Mathematics Oct 2019 - Feb 2020
Teaching Assistant

· Teaching Numerical Analysis.

Holon Institute of Technology (HIT), Department of Mathematics Feb 2020 - July 2020
Lecturer

· Teaching Deep Learning for Computer Vision.

Bar-Ilan University, Department of Mathematics Oct 2018 - July 2020
Research And Teaching Assistant

· Teaching the following courses: partial differential equations (PDE), Introduction to linear mathematical optimization, Numerical Analysis 1, and Tools for Numerical Programming for Engineering.
· Academic research guidance and code review for Bachelor and Master computer science students' final project.

Bar-Ilan University, Department of Computer Science July 2020 - July 2021
Research And Teaching Assistant

· Teaching the following courses: Advanced Programming 1 and Advanced Programming 2.
· Academic research guidance for Master computer science students' final project.

ACADEMIC HONORS AND AWARDS

Bar-Ilan University 2017
M.Sc student

· A prize for excellence in studies and research at the master's degree in the name of David Barkovski.

LIST OF PUBLICATIONS

Articles in Refereed Journals

1. **T. Lazebnik**, L. Shami, S. Bunimovich-Mendrazitsky, Pandemic Management by a Spatio-temporal Mathematical Model. International Journal of Nonlinear Sciences and Numerical Simulation. 2021.
   IF = 2.007; 0 citations.

2. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, L. Shaikhet, Novel Method to Analytically Obtain the Asymptotic Stable Equilibria States of Extended SIR-type Epidemiological Models. Symmetry. 2021.
   IF = 3.11; 0 citations.

3. **T. Lazebnik**, L. Shami, S. Bunimovich-Mendrazitsky, Spatio-Temporal Influence of Non-Pharmaceutical Interventions Policies on Pandemic Dynamics and the Economy: The Case of COVID-19. Economic Research-Ekonomska Istraživanja. 2021.
   IF = 3.034; 0 citations.

4. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, The signature features of COVID-19 pandemic in a hybrid mathematical model - implications for optimal work-school lockdown policy. Advanced Theory and Simulations. 2021.
   IF = 2.951; 2 citations.

5. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, N. Aaroni, PDE based geometry model for BCG immunotherapy of bladder cancer. Biosystems. 2020.
   IF = 1.947; 1 citations.

6. **T. Lazebnik**, S. Yantez, S. Bunimovich-Mendrazitsky, N. Aaroni, Treatment of Bladder Cancer Using BCG Immunotherapy: PDE Modeling. Functional Differential Equations. 2019.
   IF = No IF; 1 citations.

7. **T. Lazebnik**, S. Yantez, A Stable Algorithm for Numerical Matrix Exponent. Functional Differential Equations. 2017.
   IF = No IF; 1 citations.

Manuscripts Submitted / Under Review

1. **T. Lazebnik**, R. Rezni, Bunimovich-Mendrazitsky, A. Rosenfeld, Balancing Explainability-Performance Feature Selection Algorithm through Iterative Ensemble Intersections.

2. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, Decision Tree Post-Pruning Without Loss Of Accuracy using the SAT-PP algorithm with An Empirical Evaluation on Clinical Data.

3. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, Improved Geometric Configuration for the Bladder Cancer BCG-based Immunotherapy Treatment Model.
4. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, A More Numerically Accurate Algorithm For Matrix Exponent.
5. **T. Lazebnik**, H. Weitman, Y. Goldberg, G. A. Kaminka, Rivendell: Project-Based Academic Search Engine.
6. **T. Lazebnik**, Z. Bahouth, S. Bunimovich-Mendrazitsky, S. Halachmi, Predicting Acute Kidney Injury Following Open Partial Nephrectomy Treatment Using SAT-Pruned Explainable Machine Learning Model.
7. **T. Lazebnik**, A. Alexi, Comparison of Pandemic Intervention Policies in Different Building Types Using a Spatio-Temporal Model.
8. L. Shami, **T. Lazebnik**, Financing and Managing Epidemiological-Economic Crisis: The Reserve Model.
9. S. Natan, **T. Lazebnik**, E. Lerner, A Distinction of Three Online Learning Pedagogic Paradigms.
10. **T. Lazebnik**, Optimal Intervention Policies For the COVID-19 Pandemic Emerge from Socioeconomic-Heterogeneous Dynamics. (Commentary paper)

Research that will be submitted during 2021

1. **T. Lazebnik**, L. Shami, S. Bunimovich-Mendrazitsky, Optimal Border Controls and Travel Restrictions During anEpidemiological-Economic Crises Using Artificial Intelligent.
2. **T. Lazebnik**, L. Shami, S. Bunimovich-Mendrazitsky, Pharmaceutical and Non-pharmaceutical Intervention Policies of a Multi-Sectoral Economic-Epidemiological Model.
3. **T. Lazebnik**, H. Weitman, G. A. Kaminka, Graph-Based Pharmacokinetics-Pharmadynamics Modeling for Large Scale Systems: Nanoparticles Case.
4. **T. Lazebnik**, A. Rosenfeld, Optimal Filter And Embedding Feature Selection Ensemble For Explainable Machine Learning Models.
5. **T. Lazebnik**, A. Rosenfeld, Novel Stability Analysis For Feature Selection Algorithms.
6. **T. Lazebnik**, H. Weitman, G. A. Kaminka, Generic Purpose Pharmacokinetics-Pharmacodynamics Mathematical Model For Nanomedicine Targeted Drug Delivery: Mouse Model.
7. **T. Lazebnik**, L. Shami, A Better Estimation and Prediction of the Non-Observed Economy in Israel.
8. **T. Lazebnik**, L. Shami, Estimation of Non-Observed Economy Using Observed Economy and Partial Non-Observed Economy with Deep Learning.
9. **T. Lazebnik**, U. Itai, Pandemic Spread Is Bounded by Heat Spread.
10. **T. Lazebnik**, G. Blumrosen, Mathematical Model for Pandemic with Mutations Spread.
11. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, Mathematical model for the BCG-based Treatment Of Long-TermType 1 Diabetes.
12. **T. Lazebnik**, A. Alexi, City-level Dynamic Pandemic Management Using DeepReinforcement learning and Spatio-Temporal Model.
13. **T. Lazebnik**, The Influence Of Lockdown Due To Pandemic On The Population's Mental Health.
14. T. Gargantini, **T. Lazebnik**, D. Arieli, What Influence The Brazilian Public Sector Employees' Engagement.

15. D. Krongauz, **T. Lazebnik**, Vision-Based Swarm Behaviour Collision Avoidance Using Neuroevaluation.
16. Y. Peled, **T. Lazebnik**, A. Tzachor, S. Zemah Shamir, I. Berenshtein, Estimating the damages of an unreported oil tanker spill using integrated physical-economic modeling: the Israel February 2021 marine and coastal petroleum contamination.
17. N. Vardi, **T. Lazebnik**, M. Bar, The Connection Between Associative Distance and Rumination in Hebrew Speaking Individuals.

Invited Talks

1. **Subject:** Influence of Non-Pharmaceutical Interventions Policies on Pandemic Dynamics from Economic Prospective.
   Location: Western Galilee College, Economics Faculty Seminar, 2021.
2. **Subject:** PDE Modeling of Bladder Cancer Treatment Using BCG Immunotherapy.
   Location: Functional Differential Equations conference, 2019.
3. **Subject:** A Stable Algorithm for Numerical Matrix Exponent.
   Location: Bar-Ilan University, Mathematics Faculty Seminar, 2017.

LANGUAGES

- **Hebrew:** Native.
- **Russian:** Native.
- **English:** Full professional proficiency.