TEDDY LAZEBNIK

PERSONAL INFORMATION

Electronic Address: t.lazebnik@ucl.ac.uk
Mobile: +972-54-5524589
Marital Status: Common-law married
Birth Date: 14th July, 1997

PROFESSIONAL SUMMARY

Mathematical models and algorithms researcher (and developer) in the fields of epidemiology, medicine, 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.

Ariel University 2020 - 2021
Ph.D. in Biomathematics

· Thesis about "Modeling and Numerical Calculation of Pandemic Spread and Optimal Oncology Treatment Protocols" - supervised by Dr. Svetlana Bunimovich-Mendrazitsky.

ACADEMIC EMPLOYMENT

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

· Teaching Numerical Analysis.

Holon Institute of Technology, 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 Jul 2020 - Jul 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.

University College London, Department of Cancer Biology Sep 2021 - Current
Honorary Post-doctoral researcher

· Developing a custom genome generator for genomics medicine.

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. Z. Zemah-Shamir, S. Zemah-Shamir, A. Scheinin, D. Tchernov, **T. Lazebnik**, G. Gal, A review of the behavioural changes and physiological adjustments of elasmobranchs and teleost's to ocean acidification with a focus on sharks. Fishes. 2022.
2. **T. Lazebnik**, G. Blumrosen, Advanced Muti-Mutation with Intervention Policies Pandemic Model. IEEE Access. 2022.
3. E. Savchenko, **T. Lazebnik**, Computer Aided Functional Style Identification and Correction In Modern Russian Texts. Journal of Data, Information and Management. 2022.
4. **T. Lazebnik**, A. Alexi, Comparison of Pandemic Intervention Policies in Several Building Types Using Heterogeneous Population Model. Communications in Nonlinear Science and Numerical Simulation. 2022.
5. **T. Lazebnik**, L. Shami, S. Bunimovich-Mendrazitsky, Pandemic Management by a Spatio-temporal Mathematical Model. International Journal of Nonlinear Sciences and Numerical Simulation. 2021.
6. **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.
7. **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.
8. **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.
9. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, N. Aaroni, PDE based geometry model for BCG immunotherapy of bladder cancer. Biosystems. 2020.
10. **T. Lazebnik**, S. Yantez, S. Bunimovich-Mendrazitsky, N. Aaroni, Treatment of Bladder Cancer Using BCG Immunotherapy: PDE Modeling. Functional Differential Equations. 2019.
11. **T. Lazebnik**, S. Yantez, A Stable Algorithm for Numerical Matrix Exponent. Functional Differential Equations. 2017.

Articles in Refereed Conferences

1. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, Improved Geometric Configuration for the Bladder Cancer BCG-based Immunotherapy Treatment Model. ISMCO. 2021.

Manuscripts Submitted / Under Review

1. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, A. Rosenfeld, An Algorithm to Optimize Explainability using Feature Ensembles.
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, More Numerically Accurate Algorithm For Matrix Exponential.
4. **T. Lazebnik**, H. Weitman, Y. Goldberg, G. A. Kaminka, Rivendell: Project-Based Academic Search Engine.
5. **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.
6. **T. Lazebnik**, L. Shami, S. Bunimovich-Mendrazitsky, Optimal Border Closure Policy and Tourism Flows During Epidemiological-Economic Crises: An Artificial Intelligence Approach.
7. **T. Lazebnik**, U. Itai, Bounding Pandemic Spread By Heat Spread.
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**, L. Shami, S. Bunimovich-Mendrazitsky, Intervention Policy Influence on the Effect of Epidemiological Crisis on Industry-Level Production Through Input-Output Networks.
11. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, Generic Approach For Mathematical Model of Multi-Strain Pandemics.
12. **T. Lazebnik**, S. Bunimovich-Mendrazitsky, A. Kiselyov, Mathematical Model for BCG-based Treatment Of Type 1 Diabetes: Mouse Case.
13. A. Alexi, **T. Lazebnik**, L. Shami, Micro-Founded Tax Revenue Forecast Model In a Supply-Demand Based Economy with Heterogeneous Population.
14. **T. Lazebnik**, A. Rosenfeld, A New Definition For Feature Selection Stability Analysis.
15. **T. Lazebnik**, A. Somech, A. Itzhak-Weinberg, SubStrat: Faster AutoML with Measure-Preserving Data Subsets.
16. **T. Lazebnik**, A. Rosenfeld, Optimal Filter And Embedding Feature Selection Ensemble For Explainable Machine Learning Models.
17. L. Shami, **T. Lazebnik**, A Better Estimation and Prediction of the Non-Observed Economy in Israel.
18. **T. Lazebnik**, A. Alexi, High Resolution Mathematical Model for Airborne Pandemic Spread Indoors.

Conference Talks

1. **Subject: Lazebnik, T.** and Bunimovich-Mendrazitsky, S., Mathematical Model for the BCG-based Treatment of Type 1 Diabetes.
   Conference: Dynamical Systems Applied To Biology And Natural Science, 02.2022.

2. **Subject:** Shami, L. and **Lazebnik, T.**, Financing and Managing Epidemiological-Economic Crisis: The Reserve Model.
   Conference: ICEA, Public Policy Lessons conference, 11.2021.

3. **Subject: Lazebnik, T.**, Shami, L., and Bunimovich-Mendrazitsky, S., Epidemiological-Economical Pandemic Management By A Spatio-Temporal Mathematical Model.
   Conference: Dynamical Systems Applied To Biology And Natural Science, 02.2021.

Invited Talks (Chosen)

1. **Subject:** Simulating Complex Socioeconomic Dynamics Using the Agent-based Approach.
   Location: Reichman University, Environmental Science Institute's Faculty Seminar, 1.2022.

2. **Subject:** Optimizing Explainability Using Feature Selection With Iterative Ensembles Intersections.
   Location: Holon Institute of Technology, Computer Science Faculty Seminar, 11.2021.

3. **Subject:** Pandemic Management with Economic Outcomes.
   Location: Tel Aviv University, Mathematics Faculty Seminar, 10.2021.

4. **Subject:** Influence of Non-Pharmaceutical Interventions Policies on Pandemic Dynamics from Economic Prospective.
   Location: Western Galilee College, Economics Faculty Seminar, 6.2021.

LANGUAGES

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