

Education

- 2015 **PhD**, *Carnegie Mellon University*, Pittsburgh
Computational Biology/ School of Computer Science
Dissertation: *Inferring And Analyzing The Present And The Past Of Networks From Limited Information*
Advisor: Prof. Carl Kingsford **Committee:** Russell Schwartz, Seyoung Kim, Guy E. Blelloch
- 2011 **M.S.**, *University of Maryland*, College Park
Computer Science
- 2008 **BEng**, *Bogazici University*, Istanbul, *GPA – 3.8/4.0 (Ranked #1 in class)*
Computer Engineering

Current Interests

Machine and Deep Learning Applications in Finance, Time-series Models, Graphs, Bioinformatics

Work Experience

- Ozyegin University, Artificial Intelligence and Data Engineering Department** **Istanbul**
2024 May - **Associate Professor**
Present
- Ozyegin University, Computer Science Department** **Istanbul**
2020 Sep - **Assistant Professor**
2024 May
- J.P. Morgan Chase, Corporate and Investment Banking** **New York City**
2020 Mar - **AI & Applied ML Researcher, Lead**
2020 Sep ○ Develop techniques to identify entitlement anomalies through interaction graph analysis
- Goldman Sachs Asset Management, IMD** **New York City**
2018 Jan - **Vice President, Quantitative Strategist. Fundamental Equity (FE), \$60 billion mutual fund**
2019 Nov ○ Generated over 1.5 Sharpe signal on supply-chain dataset for biweekly-rebalanced quantamental fund
○ Developed hierarchical portfolio construction for \$5 billion Exchange Fund, by backtesting historical inflows
○ Increased annual Exchange Fund inflow to \$1 billion, by developing rule-based stock acceptance framework
○ Designed & led the whole IMD Exchange Fund portfolio construction project
- 2015 Dec - **Associate, Quantitative Strategist. Goldman Sachs Investment Partners (GSIP), flagship**
2018 Jan **multistrategy hedge fund**
○ Developed systematic allocation strategies for Event driven fund by backtesting merger data
○ Developed volatility trading strategies for Chinese market through index options
○ Developed min-cost replication & hedging algorithms to rebalance \$1 billion Liquid Alt. funds under 2 minutes
○ Responsible for risk management of \$4 billion hedge fund
- CMU, School of Computer Science** **Pittsburgh**
2015 Mar - **Machine Learning Postdoctoral Researcher,** CARNEGIE MELLON UNIVERSITY
Dec
- 2012-2015 **Research / Teaching Assistant,** CARNEGIE MELLON UNIVERSITY
- University of Maryland, School of Computer Science** **College Park**
2008-2012 **Research / Teaching Assistant,** UNIVERSITY OF MARYLAND

Publications

Journal Submissions (Under Review)

- [17] Yasin Uygun and **Emre Sefer**. Transformer-based Multivariate Commodity Price Prediction. *Journal of Commodity Markets*, In Preparation 2025
- [16] Turgay Bulut, Azra Oymaagac, and **Emre Sefer**. DeepDeg: Hybrid Transformer-CNN Model for Predicting mRNA Degradation. *IEEE Transactions on Computational Biology and Bioinformatics*, In Preparation 2025
- [15] Ayaz Akkas and **Emre Sefer**. Chaotic Time-series Prediction via Transformers. *Engineering Applications of Artificial Intelligence*, In Preparation 2025
- [14] Baris Arat and **Emre Sefer**. Multimodal Forecasting of Sub-City Real Estate Indexes: Evidence from Dubai. *Financial Innovation*, Under Review 2025
- [13] Serhat Altindag and **Emre Sefer**. Physics-Informed Neural Network-based Option Pricing. *Financial Innovation*, Under Review 2025
- [12] Doga Yilmaz and **Emre Sefer**. Comparison of Biological Graph Alignment Algorithms with Hyperbolic Heterophilic Deep Graph Learning-based Approach. *IEEE Transactions on Molecular, Biological, and Multi-Scale Communications*, Under Review 2025
- [11] Ahmet Cagatay Savasli and **Emre Sefer**. Predicting Mergers and Acquirers from Text via Deep Learning. *Intelligent Systems in Accounting, Finance and Management*, Under Review 2025
- [10] Beyza Kaya and **Emre Sefer**. Temporal Expression Prediction by Integrating Genome Dynamics via Spatio-temporal GNNs. *BioData Mining*, Under Review 2025
- [9] Betul Seyhan and **Emre Sefer**. Analyzing The Genome Structure across Cellular Differentiation via Topological Data Analysis. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, Under Review 2025
- [8] Elena Kudret and **Emre Sefer**. Optimal Reconstruction of Graph Evolution History Under Preferential Attachment Model. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, Under Review 2025
- [7] Deniz Ozbakir, Arda Erdogan, Uygur Kaya, and **Emre Sefer**. Deep Time-series Methods to Enhance Company Earnings Prediction Performance. *Engineering Applications of Artificial Intelligence*, Under Review 2025
- [6] Umut Oskay, Baris Tudes, and **Emre Sefer**. Enhancing Tumor T cell Antigen Prediction by Integrating Deep Protein Representations. *BMC Bioinformatics*, Under Review 2025
- [5] Selin Yilmaz and **Emre Sefer**. Pairs Trading with Time-Series Deep Learning Models. *Journal of Finance and Data Science*, Under Review 2025
- [4] Mustafa Pala and **Emre Sefer**. A Comparative Analysis of Topological Domain Callers over RNA Associated Interactome. *BMC Bioinformatics*, Under Review 2025
- [3] Hakan Demir, Betul Seyhan, **Emre Sefer**, and Ilknur Erucar. Investigating CH₄/N₂ separation performances of porous polymer networks through molecular simulations and Deep Learning. *ACS Applied Materials & Interfaces*, In Preparation 2025
- [2] Emir Ulurak, Beyza Kaya, and **Emre Sefer**. Diffusion-Based Valuable NFT Generation. *Multimedia Tools and Applications*. Under Review 2025
- [1] Tuna Alaygut and **Emre Sefer**. Deep Q-Network Based Cryptocurrency Investment Strategies Using Transformer Function Approximator. *Applied Intelligence*, Under Review 2025

Journal Publications

- [30] Zehra Erva Ergun and **Emre Sefer**. Financial Statement Fraud Detection via Large Language Models. *Intelligent Systems in Accounting, Finance and Management*, 2025

- [29] Batur Gezici and **Emre Sefer**. PageRank-based Unsupervised Deep Vertex Representations for Anti-Money Laundering Detection. *IEEE Access*, 2025
- [28] Beyza Kaya and **Emre Sefer**. GAT-HiC: Efficient Reconstruction of 3D Chromosome Structure via Residual Graph Attention Neural Networks. *IEEE Transactions on Computational Biology and Bioinformatics*, 2025
- [27] Said Bolluk, Reyhan Aydogan, **Emre Sefer**, Ece Kalaycioglu Ozdemir, and Senem Seyis. Synthetic Data Generation and Energy Consumption Prediction in District Building Energy Modeling. *Energy and Buildings*, 2025
- [26] Batuhan Eralp and **Emre Sefer**. High order chromatin structure connects sQTLs with the splicing of distant genes. *Scientific Reports*, 2025
- [25] Batuhan Eralp and **Emre Sefer**. Joint Analysis of sQTL and Hi-C Reveals Spatial Proximity Between sQTLs and Target Genes in Cancer Tissues. *Scientific Reports*, 2025
- [24] Zehra Erva Ergun and **Emre Sefer**. FinSentiment: Predicting Financial Sentiment Through Transfer Learning. *Intelligent Systems in Accounting, Finance and Management*, 2025
- [23] Yasin Uygun and **Emre Sefer**. Financial Asset Price Prediction with Graph Neural Network-based Temporal Deep Learning Models. *Neural Computing and Applications*, 2025
- [22] Selinay Cetin and **Emre Sefer**. The Significance of Chromosome Conformation Capture in 3D Genome Architecture Comprehension. *Computational Biology and Chemistry*, 2025
- [21] Peker Celik and **Emre Sefer**. Analyzing Transaction Graphs via Motif-Based Graph Representation Learning for Cryptocurrency Price Prediction. *Computational Economics*, 2025
- [20] Selinay Cetin and **Emre Sefer**. A Graphlet-based Explanation Generator for Graph Neural Networks over Biological Datasets. *Current Bioinformatics*, 2025
- [19] **Emre Sefer**. DRGAT: Drug Response Prediction Through Diffusion-based Graph Attention Network. *Journal of Computational Biology*, 2025
- [18] Mustafa Pala and **Emre Sefer**. NFT Price and Sales Characteristics Prediction by Transfer Learning of Visual Attributes. *The Journal of Finance and Data Science*, 2024
- [17] Batuhan Eralp and **Emre Sefer**. Reference-free Inferring of Transcriptomic Events in Cancer Cells over Single-cell Data. *BMC Cancer*, 2024
- [16] Batur Gezici and **Emre Sefer**. Deep Transformer-based Asset Price and Direction Prediction. *IEEE Access*, 2024
- [15] Necla Nisa Soylu and **Emre Sefer**. DeepPTM: Protein Post-translational Modification Prediction from Protein Sequences by Combining Deep Protein Language Model with Vision Transformers. *Current Bioinformatics*, 2024
- [14] Necla Nisa Soylu and **Emre Sefer**. BERT2OME: Prediction of 2'-O-methylation Modifications from RNA Sequence by Transformer Architecture Based on BERT. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2023
- [13] **Emre Sefer**. MOCMIN: Convex Inferring of Modular Contact Networks over COVID Diffusion Data. *Turkish Journal of Electrical Engineering and Computer Sciences*, 2022
- [12] **Emre Sefer**. A Comparison of Topologically Associating Domain Callers over Mammals at High Resolution. *BMC Bioinformatics*, 2022
- [11] **Emre Sefer**. Biocode: A Data-Driven Procedure to Learn the Growth of Biological Networks. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2022
- [10] **Emre Sefer**. ProbC: Joint Modeling of Epigenome and Transcriptome Effects in 3D Genome. *BMC Genomics*, 2022
- [9] **Emre Sefer**. Hi-C Interaction Graph Analysis Reveals the Impact of Histone Modifications in Chromatin Shape. *Applied Network Science*, 2021

- [8] **Emre Sefer** and Carl Kingsford. Metric Labeling and Semi-metric Embedding for Protein Annotation Prediction. *Journal of Computational Biology*, 2021
- [7] **Emre Sefer** and Carl Kingsford. Semi-nonparametric Modeling of Topological Domain Formation From Epigenetic Data. *Algorithms for Molecular Biology*, 2019
- [6] M Kleyman, **Emre Sefer**, Nicola, T., Espinoza, C., Chhabra, D., Hagood, J. S., Kaminski, N., Ambalavanan, N., and Ziv Bar-Joseph. Selecting the most appropriate time points to profile in high-throughput studies. *eLife Sciences* 2017
- [5] **Emre Sefer**, M Kleyman, and Ziv Bar-Joseph. Tradeoffs between Dense and Replicate Sampling Strategies for High-Throughput Time Series Experiments. *Cell systems*, 2016
- [4] **Emre Sefer**, Geet Duggal, and Carl Kingsford. Deconvolution Of Ensemble Chromatin Interaction Data Reveals The Latent Mixing Structures In Cell Subpopulations. *Journal of Computational Biology*, 2016
- [3] **Emre Sefer** and Carl Kingsford. Diffusion Archaeology for Diffusion Progression History Reconstruction. *Knowledge and Information Systems*, 2016
- [2] Geet Duggal, Rob Patro, **Emre Sefer**, Hao Wang, Darya Filippova, Samir Khuller, and Carl Kingsford. Resolving spatial inconsistencies in chromosome conformation measurements. *Algorithms for Molecular Biology*, 2013
- [1] Rob Patro, **Emre Sefer**, Justin Malin, Guillaume Marcais, Saket Navlakha, Carl Kingsford. Parsimonious reconstruction of network evolution. *Algorithms for Molecular Biology*, 2012

Conference Publications with Proceedings (Refereed)

- [22] Tuna Alaygut, **Emre Sefer**. Hypergraph Neural Networks to Predict Stock Movements By Exploring Higher-order Relationships. *ICAIF 2025*
- [21] Tuna Alaygut, **Emre Sefer**. Financial Statement Fraud Detection with a Categorical-to-Numerical Data Representation. *ICAIF 2025*
- [20] Baris Arat, Hasan Fehmi Ates, **Emre Sefer**. Multi-Context Real Estate Market Prediction. *SIU 2025*
- [19] **Emre Sefer**. Anomaly Detection via Graph Contrastive Learning. *SDM 2025*
- [18] **Emre Sefer**. PageRank-based Unsupervised Deep Vertex Representations for Anti-Money Laundering Detection. *Complex Networks 2024*
- [17] **Emre Sefer** and Samuel Gilmour. Optimal Reconstruction of Graph Evolution Dynamics for Duplication-Based Models. *Complex Networks 2023*
- [16] Betul Seyhan and **Emre Sefer**. NFT Primary Sale Price and Secondary Sale Prediction via Deep Learning. *ICAIF 2023, 4th ACM International Conference on AI in Finance*
- [15] Tuna Tuncer, Uygur Kaya, **Emre Sefer**, Onur Uralcam, Tugcan Hoser. Asset Price and Direction Prediction via Deep 2D Transformer and Convolutional Neural Networks. *ICAIF 2022, 3rd ACM International Conference on AI in Finance*
- [14] Ugur Dolu and **Emre Sefer**. A Novel GBT-based Approach for Cross-Channel Fraud Detection on Real-World Banking Transactions. *AIAI 2022, 18th International Conference on Artificial Intelligence Applications and Innovations*
- [13] **Emre Sefer**. Joint Modeling of Histone Modifications in 3D Genome Shape Through Hi-C Interaction Graph. *Complex Networks 2020*
- [12] **Emre Sefer**, and Ziv Bar-Joseph. Shall we dense? Comparing design strategies for time series expression experiments. *RECOMB 2016*
- [11] **Emre Sefer**, Geet Duggal, and Carl Kingsford. Deconvolution Of Ensemble Chromatin Interaction Data Reveals The Latent Mixing Structures In Cell Subpopulations. *RECOMB 2015*

- [10] **Emre Sefer** and Carl Kingsford. Convex Risk Minimization To Infer Networks From Probabilistic Diffusion Data At Multiple Scales. ICDE 2015
- [9] **Emre Sefer** and Carl Kingsford. Semi-nonparametric Modeling of Topological Domain Formation From Epigenetic Data. WABI 2015
- [8] **Emre Sefer** and Carl Kingsford. Diffusion Archaeology for Diffusion Progression History Reconstruction. ICDM 2014
- [7] Geet Duggal, Rob Patro, **Sefer, Emre**, Hao Wang, Darya Filippova, Samir Khuller, and Carl Kingsford. Resolving spatial inconsistencies in chromosome conformation measurements. WABI 2012
- [6] Robert Patro, Geet Duggal, **Emre Sefer**, Hao Wang, Darya Filippova, and Carl Kingsford. The missing models: a data-driven approach for learning how networks grow. KDD 2012
- [5] Rob Patro, **Emre Sefer**, Justin Malin, Guillaume Marcais, Saket Navlakha, Carl Kingsford. Parsimonious reconstruction of network evolution. WABI 2011
- [4] Robert Gove, Nick Gramsky, **Emre Sefer**, Ben Shneiderman. NetVisia: Heat map & matrix visualization of dynamic social network statistics & content. SocialCom 2011
- [3] **Emre Sefer** and Carl Kingsford. Metric labeling and semi-metric embedding for protein annotation prediction. RECOMB 2011
- [2] Dana Nau, **Emre Sefer**, Ugur Kuter. Thinking ahead in real-time search. ICAPS 2009
- [1] **Emre Sefer**, Ugur Kuter, Dana Nau. Real-time A* search with depth-k lookahead. International Symposium on Combinatorial Search, SoCS 2009

Journal & Conference Abstracts with Proceedings

- [1] Teodora Nicola, **Emre Sefer**, et al. Identification Of Optimal Time Points And Proteomic Profiling During Murine Lung Alveolar Septation [abstract]. American Journal of Respiratory and Critical Care Medicine 2016;193:A6561
- [2] C. R. Espinoza, D. Chhabra, T. Nicola, N. Ambalavanan, N. Kaminski , **Emre Sefer** , Z. Bar-Joseph, J. S. Hagood. Dynamic Changes of DNA Methylation During Different Stages of Normal Mouse Lung Development [abstract]. American Journal of Respiratory and Critical Care Medicine 2016;193:A2344

Supervised Thesis

- Ugur Dolu, 2022, Novel Sampling Technique and Gradient Boosting Tree-based Approach for Cross-channel fraud detection. M.S., Ozyegin University Data Science Department
- Zehra Erva Ergun, 2022, Word Embeddings on Financial Text Datasets. M.S., Ozyegin University Computer Science Department
- Batuhan Eralp, 2023, Utilizing Hi-C Data To Reveal The Proximity of SQTLS and Target Genes in 3D Genome of Cancer Cells. M.S., Ozyegin University Computer Science Department
- Necla Nisa Soylu, 2023, Prediction of RNA and Protein Modifications by Deep Learning Methods. M.S, Ozyegin University Artificial Intelligence Department
- Mustafa Pala, 2023, NFT Sales Characteristics And Price Prediction By Transfer Learning of Visual Attributes. M.S., Ozyegin University Computer Science Department
- Batur Gezici, 2023, Deep Transformer-based Asset Price and Direction Prediction. M.S., Ozyegin University Artificial Intelligence Department
- Tuna Alaygut, 2024, Deep Q-Network Based Cryptocurrency Investment Strategies Using Transformer Function Approximator. M.S., Ozyegin University Computer Science Department
- Yasin Uygun, 2024, Financial Asset Price Prediction with Graph Neural Network-based Temporal Deep Learning Models. M.S., Ozyegin University Computer Science Department

Thesis In Progress

- Emre Gol, 2025-present. PhD, Ozyegin University Computer Science Department
- Gorkem Yencak, 2021-present. PhD, Ozyegin University Computer Science Department
- Yasin Uygun, 2024-present. PhD, Ozyegin University Computer Science Department
- Devrim Topal 2024-present. PhD co-advise, Ozyegin University Computer Science Department
- Goktug Ovren 2025-present. PhD co-advise, Ozyegin University Computer Science Department
- Baris Arat, 2023-present. M.S., Ozyegin University Computer Science Department
- Ahmet Cagatay Savasli, 2023-present. M.S., Ozyegin University Computer Science Department
- Muratcan Kilicci, 2022-present. M.S., Ozyegin University Computer Science Department
- Betul Seyhan, 2023-present. M.S., Ozyegin University Computer Science Department
- Welaa Sekheta, 2024-present. M.S., Ozyegin University Computer Science Department
- Serhat Altindag, 2024-present. M.S., Ozyegin University Computer Science Department
- Merve Zeynep Ozturk, 2024-present. M.S., Ozyegin University Computer Science Department
- Nazar Aktosun, 2024-present. M.S., Ozyegin University Computer Science Department
- Beyza Kaya, 2024-present. M.S., Ozyegin University Computer Science Department
- Furkan Ayik, 2024-present. M.S., Ozyegin University Computer Science Department
- Burhan Duran, 2024-present. M.S., Ozyegin University Data Science Department
- Turgay Bulut, 2025-present. M.S., Ozyegin University Computer Science Department
- Tamerlan Hajiyev, 2025-present. M.S., Ozyegin University Computer Science Department
- Azra Oymaagac, 2025-present. M.S., Ozyegin University Computer Science Department
- Ismail Ercedogan, 2025-present. M.S., Ozyegin University Computer Science Department

Honors and Awards

- Received Best Paper Award at RECOMB 2016
- 2020 Marie Sklodowska-Curie Actions Seal of Excellence winner (MSCA proposal 101031511 – DeepGenome)
- TUBITAK, H2020 Programs, "Over the threshold" award in 2020 for scoring 86.4/100 in H2020-MSCA-IF-2020 proposal with "DeepGenome" project
- Received University of Maryland Computer Science Fellowship during graduate studies
- Graduated from Bogazici University in the 1st rank with High Honors
- Co-received Best Video Award at KDD 2012 conference
- Ranked in top 300 in 1.500.000 people in Turkey University Entrance Exam (OSS)

Research Grants

- TUBITAK (Scientific and Technological Research Council of Turkey) 1001: Predicting Output Associated with Biological Sequences across Multiple Species Using Deep Learning and Large Language Models
- TUBITAK (Scientific and Technological Research Council of Turkey) 3501: DeepGenome: Inferring and Analyzing Genome Shape and Its Dynamics Across Species and Cell Types by Deep Learning

- TUBITAK (Scientific and Technological Research Council of Turkey) 1002: RNA Modification Prediction by Combining Deep Learning with Natural Language Processing Techniques across Species

Invited Talks & Tutorials

Peer-reviewed Conference Presentations

- Anomaly Detection via Graph Contrastive Learning. SDM 2025, Alexandria, Virginia, USA. 02/05/2025
- PageRank-based Unsupervised Deep Vertex Representations for Anti-Money Laundering Detection. Complex Networks 2024, Istanbul, Turkey. 11/12/2024
- Optimal Reconstruction of Graph Evolution Dynamics for Duplication-Based Models. Complex Networks 2023, Menton Rivera, France. 16/12/2023
- NFT Primary Sale Price and Secondary Sale Prediction via Deep Learning. ICAIF 2023, New York City, USA. 16/11/2023
- Asset Price and Direction Prediction via Deep 2D Transformer and Convolutional Neural Networks. ICAIF 2022, New York City, USA. 2/11/2022
- MOCMIN: Convex Inferring of Modular Low-Rank Contact Networks over COVID Diffusion Data. BIODKDD workshop in KDD 2022, Washington DC, USA. 15/08/2022
- Biocode: A Data-Driven Approach for Learning How Biological Networks Grow. BIODKDD workshop in KDD 2021, Singapore. 15/08/2021
- MOCMIN: Convex Inferring of Modular Contact Networks over COVID Diffusion Data. Communities in Networks Satellite in Networks 2021, Indiana, USA. 01/07/2021
- Joint Modeling of Histone Modifications in 3D Genome Shape Through Hi-C Interaction Graph. Complex Networks 2020, Madrid, Spain. 02/12/2020
- Shall we dense? Comparing design strategies for time series expression experiments. RECOMB 2016, Los Angeles, USA. 10/04/2016
- Semi-nonparametric Modeling of Topological Domain Formation From Epigenetic Data. WABI 2015, Atlanta, USA. 15/09/2015
- Deconvolution Of Ensemble Chromatin Interaction Data Reveals The Latent Mixing Structures In Cell Subpopulations. RECOMB 2015, Warsaw, Poland. 18/04/2015
- Convex Risk Minimization To Infer Networks From Probabilistic Diffusion Data At Multiple Scales. ICDE 2015, Seoul, South Korea. 12/04/2015
- Diffusion Archaeology for Diffusion Progression History Reconstruction. ICDM 2014, Shenzhen, China. 18/12/2014
- Metric labeling and semi-metric embedding for protein annotation prediction. RECOMB 2011, Vancouver, Canada. 10/04/2011
- Real-time A* search with depth-k lookahead. International Symposium on Combinatorial Search. SoCS 2009, Los Angeles, USA. 14/08/2009

Tutorials

- Finding Topological Domains in Genome. ACM-BCB 2015, Atlanta, USA. 12/09/2015

Special Invited Talks

- Derin Öğrenme Vasıtasıyla RNA ve Protein Değişimlerinin Tahmini. Association for Systems Biology and Bioinformatics, Istanbul, Turkey. 02/12/2023
- Temporal Deep Learning and Graph Neural Networks for Asset Price Prediction. Ozyegin University School of Management Seminar, Istanbul, Turkey. 10/11/2023

- ChatGPT: Advantages and Limitations. Basic Oncology Association (TEOD) Seminar, Istanbul, Turkey. 31/05/2023
- Analyzing The Present And The Past Of The Networks From Limited Information. Ozyegin University Computer Science Department, Istanbul, Turkey. 14/04/2020
- Analyzing The Present And The Past Of The Networks From Limited Information. Istanbul Technical University, Faculty of Computer Engineering, Istanbul, Turkey. 04/04/2020
- Analyzing The Present And The Past Of The Networks From Limited Information. Yeditepe University, Computer Engineering Department, Istanbul, Turkey. 27/03/2020
- Analyzing The Present And The Past Of The Networks From Limited Information. Kadir Has University Computer Science Department, Istanbul, Turkey. 20/03/2020
- Deconvolution Of Ensemble Chromatin Interaction Data Reveals The Latent Mixing Structures In Cell Subpopulations. Ziv-Bar Joseph's Systems Biology Research Group at CMU Machine Learning Department, Pittsburgh, PA. 14/02/2015

Posters

- Convex Risk Minimization To Infer Networks From Probabilistic Diffusion Data At Multiple Scales. GLBIO 2015, Pittsburgh, USA. 12/04/2015
- Real-time A* search with depth-k lookahead. International Symposium on Combinatorial Search. SoCS 2009, Los Angeles, USA. 14/08/2009

Professional Contributions

- Serving as **editor** for BMC Bioinformatics, Frontiers in Artificial Intelligence, Frontiers in Big Data, and Journal of Advances in Management Sciences & Information Systems journals
- Gave **tutorial** about topological domains in 3D genome at ACM-BCB 2015
- Served as a **Program Committee Member** and reviewed papers for Complex Networks 2025, ACML 2025, IJCAI 2025, KDD 2025, IJCAI 2025, ICAIF 2024, ICAIF 2025, SDM 2024, Complex Networks 2024, ISMB MLCSB COSI 2024, ACML 2024, ECAI 2024, IIAI AAI 2024, KDD 2024, WWW 2024, NLDL 2024, ISMB MLCSB COSI 2023, ACML 2023, KDD 2023, ASYU 2022 & 2023, IJCAI 2021 & 2022, Complex Networks 2021 & 2022, ACM-BCB 2015
- Served as **IEEE Turkey Treasurer** between 2024-2025
- Served proctor of Ozyegin University Teams finishing in 1st and 2nd in Turkey for IEEEExtreme coding competitions in 2022, 2023, and 2024.
- Served referee as IEEE Computer Society Türkiye Chapter 2024 M.Sc. Thesis Competition
- Co-organized Artificial Intelligence Summer School at Ozyegin University, with almost 500 participants
- Worked as a part of NIH funded LungMAP project to map lung dynamics (<https://www.lungmap.net/>)
- Contributed to the writing of NIH grant proposal on investigating 4D dynamics of chromosome conformation
- Academic Coordinator for Erasmus and International Exchange Programs, Computer Science Department, Ozyegin University, since Spring 2021

Teaching Experience

- CS 104: Introduction to Programming
- CS 201: Data Structures and Algorithms
- CS 333: Algorithms Analysis

- CS 412/512: Bioinformatics Algorithms
- CS 440/540: Machine Learning in Finance
- CS 452/552: Data Science with Python
- CS 533: Advanced Algorithms
- DS 540: Machine Learning with Python

Undergraduate Senior Project Supervision

- A transformer-based model for predicting high-resolution replication timing. Utku Ayten, Eren Ozgun, 2025
- Framework for predicting Commodities Prediction via Technical Analysis via Deep Learning. Muzaffer Canan, Ozgur Yavuz, Kemal Tas, 2025
- Jump detection in financial time series using deep learning algorithms. Yigit Mert, Roshaan Rauf, 2025
- Hybrid Transformer-CNN Model for Predicting mRNA Degradation. Turgay Bulut, Azra Oymaagac, 2025
- Predicting Stock Returns by Integrating Supply Chain Graphs. Selin Gulmez, Vesilya Gezer, 2025
- Chaotic Time Series Prediction via Transformers. Semanur Yasar, Utku Akkas, 2024
- NFT Image Synthesis via Generative Models. Emir Ulurak, Beyza Kaya, 2024
- Machine Learning for Company Earnings Prediction. Deniz Ozbakir, Arda Erdogan, Uygur Gun, 2024
- LLM Supported SEC Report Analyzer Chat Assistant. Selim Cavas, Salih Metin Arkanoz, 2024
- Music recommendation system that addresses the Problem of stress reduction and improved work performance. Defne Sirvanci, Sezin Sayan, Doga Yilmaz, 2024
- Deep Learning for Predicting Tumor T cell Antigens. Umut Oskay, Baris Tudes, 2024
- Enhancing Pairs Trading with Machine Learning Models. Selin Yilmaz, Efsa Caliskan, Emre Erkus, 2024
- Prediction of SARS-CoV-2 Variants From Protein Sequence by Federated Transformer Architecture Based on BERT. Jana Ayoub, 2023
- Bitcoin Price Prediction Regarding Transaction Graphs. Atahan Caldir, Ezgi Maden, Emre Kenar, 2023
- NFT Primary Sale Price and Secondary Sale Prediction. Ege Gungordu, Betul Seyhan, Irem Karabacakogullarindan, 2023
- Bullseye: Stock Market Index Calculator. Gufran Yesilyurt, Murat Can Altun, Kaan Yilmaz, 2023
- Cryptocurrency Price Prediction via On-Chain Analysis. Ceren Yildizdogan, Furkan Kerem Selimoglu, Yigit Demirsan, 2023
- MergerBERT: Predicting Merger Targets and Acquirers from Text via Pretrained Language Models. Alanur Bilgili, Ahmet Cagatay Savasli, Damla Tutuncu, 2023
- Commodity Price Forecasting by Deep Learning. Mert Dallar, Israh Zahid, Isam Barghothi, 2023
- Price Prediction via earnings transcript calls. Zeynep Basik, Batuhan Uz, 2023
- Stock Price and Direction Prediction via Deep Attention-Based Convolutional Neural Networks. Onur Alacam, Tugcan Hoser, Uygur Kaya, Tuna Tuncer, 2022

- Analyzing Transaction Graphs for Price Prediction of Bitcoin. Peker Celik, Eray Erdogan, Umut Cirak, 2022
- Simultaneous FX Price Prediction by Using Temporal Multivariate Graph Neural Networks. Hamza Ayberk Akbalik, Nurettin Burak Altıntas, Ege Öztas, 2022
- Comprehensive Financial Domain Specific Language for Algorithmic Trading. Egemen Iscan, Hasan Erdem Bilgin, Yamac Demirkan Yilmaz, 2022
- Cryptocurrency Price Prediction by Using Sentiment Data and Attention Based Architectures. Berkay Celik, Erdem Er, Muratcan Kılıccı, 2022
- Natural Language Processing and Deep Reinforcement Learning Technologies in Cryptocurrency Trading. Alperen Akyol, Ayberk Orhon, 2022
- Essential Protein Prediction Using Graph Neural Networks. Abdullah Saydemir, Burcu Arslan, 2022
- Crypto-currency Price Prediction Using News and Social Networks Data. Baris Karaer, Ertan Ayanlar, 2021
- Predicting Market Movements over Supply Chain Network via Graph Neural Networks. Dogukan Dincer Duduoglu, Ertugrul Ozvardar, 2021
- A Cloud-Based Web Platform for Electricity Market Price Forecast. Yaren Sever, 2021
- Financial Sentiment Analysis with BERT. Ilhami Berker Gurcay, Cem Denizsel, Emirhan Demir, 2021
- Match Score Prediction Using Machine Learning. Ahmet Erdem Gonul, 2021
- SCAN EAT AND TREAT(SEAT). Muhammad Abdulwahab Shafiq, Muhammad Ibrahim, 2021
- Predicting Default Probability and Providing an Investment Strategy for P2P Loan Selection. Cem Taha Aker, 2021