

Ayse Berceste Dincer

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EDUCATION

University of Washington

Ph.D. in Computer Science

Seattle, WA

June 2022

- GPA: 3.89/4.00

University of Washington

M.S. in Computer Science

Seattle, WA

June 2019

- GPA: 3.87/4.00
- Accepted with Anne Dinning-Michael Wolf Endowed First-Year Fellowship
- Highlighted Coursework: Machine Learning, Statistical Methods in CS, Computational Biology, Data Visualization

Bilkent University

B.S. in Computer Engineering

Ankara, Turkey

June 2017

- GPA: 4.00/4.00 (Class and Faculty Rank: 1st)
- Accepted with Comprehensive Fellowship

RESEARCH EXPERIENCE

Research Assistant

Noble Lab, University of Washington

2021 – Present

Seattle, WA

- Advised by Prof. William Stafford Noble
- Developed deep learning models by incorporating biological hypotheses into the prediction tasks

Research Assistant

AIMS Lab, University of Washington

2017 – 2020

Seattle, WA

- Advised by Prof. Su-In Lee
- Developed unsupervised machine learning models to solve biological problems with a focus on cancer

Undergraduate Researcher

Bioinformatics and Computational Genomics Group, Bilkent University

Autumn 2016

Ankara, Turkey

- Advised by Prof. Can Alkan
- Developed sequence alignment algorithms for variant detection in DNA

PROJECTS

A deep learning approach to eliminate bias in protein quantification

2021 – Present

- Developed a convolutional neural network model to eliminate quantitative bias from protein measurements
- Contributed talks at MLCB 2021 & ASMS 2021
- Contributed talk at ISMB/ECCB CompMS 2021 (received best presentation award)

An integrative method for learning interpretable communities of biological pathways

2020

- Developed an integrative web tool using community detection algorithms to reconcile biological pathways from different databases

Adversarial Deconfounding Autoencoder for learning robust embeddings

2019 – 2020

- Developed an unsupervised deep learning approach to learn deconfounded embeddings
- Published in Proceedings of ECCB 2020
- Contributed talk at ISMB MLCSB 2020

DeepProfile: Interpretable deep learning of latent variables for 18 human cancers

2018 – 2020

- Developed an interpretable deep learning framework for learning gene expression embeddings
- Highlighted as a spotlight talk at MLCB 2019 | Poster at ICML CompBio Workshop 2018

Explorator: Personalized travel plan generator

2016 – 2017

- Developed a travel application with personalized schedules generated using data from social media platforms
- Received Sibel Ozelci Best Senior Design Project Award

PUBLICATIONS AND CONFERENCE PRESENTATIONS

- **Dincer, A. B.**, Lu, Y. Y., & Noble, W. S. (2021). Inferring peptide coefficients from quantitative mass spectrometry data. *American Society for Mass Spectrometry (ASMS)*.
- Qiu, W. Chen, H., **Dincer, A. B.**, Lundberg, S., Kaeberlein, M. & Lee, S. I. (2021). Interpretable machine learning prediction of all-cause mortality. *medRxiv* 2021.01.20.21250135.
- **Dincer, A. B.**, Janizek, J. D., & Lee, S. I. (2020). Adversarial Deconfounding Autoencoder for learning robust gene expression embeddings. *Bioinformatics*, 36(Supplement 2), i573–i582.
- Weinberger, E., **Dincer, A. B.** & Lee, S. I. (2020). HD-MD: Batch-effect-free embeddings of scRNA-seq data. *Machine Learning in Computational Biology (MLCB)*.
- **Dincer, A. B.**, Janizek J. D., Celik, S., Hiranuma, N., Naxerova, K. & Lee, S. I. (2019). DeepProfile: Interpretable deep learning of latent variables from a compendium of expression profiles for 18 human cancers. *Machine Learning in Computational Biology (MLCB)*.
- Janizek J. D., **Dincer, A. B.**, Lundberg, S., Naxerova, K. & Lee, S. I. (2019). EXPRESS: Explainable prediction of anti-cancer drug synergy. *International Conference on Machine Learning (ICML) Workshop on Computational Biology*.
- **Dincer, A. B.**, Celik, S., Hiranuma, N., & Lee, S. I. (2018). DeepProfile: Deep learning of cancer molecular profiles for precision medicine. *Joint International Conference on Machine Learning (ICML) and International Joint Conferences on Artificial Intelligence (IJCAI) Workshop on Computational Biology*.

TEACHING EXPERIENCE

Teaching Assistant <i>University of Washington</i> <ul style="list-style-type: none">• Machine Learning (CSE 446/546)	Autumn 2021 <i>Seattle, WA</i>
Teaching Assistant <i>University of Washington</i> <ul style="list-style-type: none">• Machine Learning for Big Data (CSE 547)	Spring 2021 <i>Seattle, WA</i>
Teaching Assistant <i>University of Washington</i> <ul style="list-style-type: none">• Computational Biology (CSE 527)	Autumn 2020 <i>Seattle, WA</i>
Teaching Assistant <i>University of Washington</i> <ul style="list-style-type: none">• Computational Biology (CSE 527)	Autumn 2019 <i>Seattle, WA</i>
Undergraduate Tutor <i>Bilkent University</i> <ul style="list-style-type: none">• Introduction to Programming for Engineers (CS 114)	Autumn 2016 <i>Ankara, Turkey</i>

UNDERGRADUATE INTERNSHIP EXPERIENCE

Summer Intern <i>SRDC (Software Research & Development Consultancy)</i> <ul style="list-style-type: none">• Collected data from medical devices and developed a mobile application for medical data monitoring	Summer 2016 <i>Ankara, Turkey</i>
Summer Intern <i>TUBITAK Software Technologies Research Institute</i> <ul style="list-style-type: none">• Developed mobile applications for tracking and tracing medical devices and cosmetic products	Summer 2015 <i>Ankara, Turkey</i>
Summer Intern <i>TUBITAK Software Technologies Research Institute</i> <ul style="list-style-type: none">• Studied web design using WordPress• Explored software management activities focused on Agile Project Management and Test-Driven Development	Summer 2014 <i>Ankara, Turkey</i>
Summer Intern <i>Akgun (Medical) Software Inc.</i> <ul style="list-style-type: none">• Studied automated testing	Summer 2014 <i>Ankara, Turkey</i>

CONTRIBUTED TALKS

- Machine Learning for Computational Biology (MLCB) 2021, “Inferring peptide coefficients from quantitative mass spectrometry data with deep learning.”
- American Society for Mass Spectrometry (ASMS) 2021, “Inferring peptide coefficients from quantitative mass spectrometry data.”
- International Conference on Intelligent Systems for Molecular Biology / European Conference on Computational Biology (ISMB/ECCB) Computational Mass Spectrometry (CompMS) 2021, “Inferring peptide coefficients from quantitative mass spectrometry data.”
- University of Washington Computational Molecular Biology (CMB) Program Virtual Retreat 2020, “Deep profiling of a compendium of expression data from 18 human cancers.”
- European Conference on Computational Biology (ECCB) 2020, “Adversarial Deconfounding Autoencoder for learning robust gene expression embeddings.”
- International Conference on Intelligent Systems for Molecular Biology (ISMB) Machine Learning in Computational and Systems Biology (MLCSB) 2020, “Adversarial Deconfounding Autoencoder for learning robust gene expression embeddings.”

TECHNICAL SKILLS

Languages: Python (proficient), Java, R, MATLAB, C/C++, HTML/CSS, SQL

Developer Tools: Jupyter Notebooks, Git, Android Studio, PyCharm, IntelliJ

Packages: NumPy, Pandas, Keras/TensorFlow, Scikit-learn, Matplotlib, Seaborn, SciPy, PyTorch, Statsmodels, Spark