

Ayse Berceste Dincer

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EDUCATION

University of Washington

Seattle, WA

Ph.D. in Computer Science

June 2022

- Concentration in Computational Biology
- GPA: 3.89/4.00

University of Washington

Seattle, WA

M.S. in Computer Science

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

Ankara, Turkey

B.S. in Computer Engineering

June 2017

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

RESEARCH EXPERIENCE

Research Assistant

2021 – Present

Noble Lab, University of Washington

Seattle, WA

- Advised by Prof. William Stafford Noble
- Developed machine learning techniques for eliminating bias in protein quantification

Research Assistant

2017 – 2020

AIMS Lab, University of Washington

Seattle, WA

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

Undergraduate Researcher

Autumn 2016

Bioinformatics and Computational Genomics Group, Bilkent University

Ankara, Turkey

- Advised by Prof. Can Alkan
- Developed algorithms for structural variant detection in human DNA

PROJECTS

Inferring peptide coefficients from quantitative mass spectrometry data

2021 – Present

- Developed a deep learning approach for eliminating peptide bias from quantitative mass spectrometry data
- 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 by revealing informative groups with distinct biological functions

Adversarial Deconfounding Autoencoder for learning robust gene expression embeddings

2019 – 2020

- Developed an unsupervised deep learning approach for learning 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
- Investigated the molecular mechanisms behind patient-level heterogeneity for 18 cancer types
- Highlighted as a spotlight talk at MLCB 2019 | Poster at ICML CompBio Workshop 2018

Explorator: Undergraduate Senior Design Project

2016 – 2017

- Developed a platform to generate personalized travel plans by collecting 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)*.
- **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 and Grader <i>Bilkent University</i> <ul style="list-style-type: none">• Introduction to Programming for Engineers (CS114)	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, Eclipse, Visual Paradigm

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