Euxhen Hasanaj

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EDUCATION

Carnegie Mellon University

Ph.D., Machine Learning *Dec 2024, Pittsburgh, PA*

- **Thesis**: Machine learning strategies for biomarker discovery: A senescence case study.
- Developed machine learning algorithms for biomarker discovery, trajectory inference, and inference of gene regulatory networks.

Carnegie Mellon University

M.S., Machine Learning *Dec 2020, Pittsburgh, PA*

- Developed a platform, Cellar, for analyzing single-cell omics data and annotating cell types.

American University in Bulgaria

B.A., Computer Science, Mathematics *May 2019, Blagoevgrad, Bulgaria*

- **Study Abroad**: University of Iowa, Spring 2018.
- Outstanding achievement in Computer Science, Mathematics.

WORK EXPERIENCE

GenBio AI

Research Scientist *Dec. 2024 – Present, Palo Alto, CA*

- Building multiscale biological foundation models to predict single-cell perturbation responses with high precision and scalability.

Sanofi

Computational Biology Intern *May – Aug. 2023, Cambridge, MA*

- Developed optimal transport algorithms to identify disease endotypes from clinical data and published findings in ISMB 2024.

Genesis Therapeutics

Machine Learning Intern *May – Aug. 2023, Burlingame, CA*

- Researched and trained generative language models for drug design.

Ritech Solutions

Machine Learning Engineer *Jan. – Sep. 2021, Tirane, Albania*

- Developed computer vision models for monocular depth estimation and image segmentation. Improved the accuracy of internal benchmarks by double-digit percent points.

Centroida

Machine Learning Engineer *Nov. 2017 – Aug. 2018, Sofia, Bulgaria*

- Developed computer vision models for face tracking based on fast CUDA kernels.

HONORS AND AWARDS

4th place, NeurIPS AutoML Decathlon Competition (2022)
Silver Medal, International Mathematics Competition for University Students (2019)
Bronze Medal, ACM, Southeastern Europe Regional Programming Contest (2017)
2nd place, National Programming Contest, Bulgaria (2017)
Honorable Mention, International Mathematical Olympiad (IMO) (2015)

PUBLICATIONS

- **Hasanaj, E.** et al. "SenSet, a novel human lung senescence cell gene signature, identifies cell-specific senescence mechanisms." *Preprint* (2024)
- **Hasanaj, E.** et al. "Recovering time-varying networks from single-cell data." *Preprint* (2024)
- **Hasanaj, E.** et al. "Integrating patients in time series clinical transcriptomics data." *ISMB* (2024)
- **Hasanaj, E.** et al. "Multiset multicover methods for discriminative marker selection." *Cell Reports Methods* (2022)
- **Hasanaj, E.** et al. "Interactive single-cell data analysis using Cellar." *Nature Communications* (2022)

ORGANIZATIONS

NIH Cellular Senescence Network (SenNet) Consortium

Biomarker Working Group *Sep. 2022 – Dec 2024*

- Developed PU-learning based methods to discover senescence biomarkers from aging lung atlases.

NIH Human BioMolecular Atlas Program (HuBMAP) Consortium

Platform Development and Data Analysis Team *Aug. 2019 – Dec. 2020*

- Developed software tools to enable large-scale collaborations, integration, and comparisons across many different single-cell omics platforms and modalities.

Mathematics Club (Polygon)

Founder/President, AUBG *Sep. 2017 – May 2019*

- Organized events including talks by students and professors, mathematics competitions, and social events between math students and professors.

SKILLS

Coding: Python, C++, R, Bash, Pytorch, Tensorflow, Scikit-learn, Scanpy, OpenCV, Pandas, Numpy, Torch-lightning, Torch-geometric
Methods: Neural Networks, LLMs, Transformers, Attention, Graph Neural Networks, scRNA-seq, scATAC-seq, Spatial omics, Computer Vision, CNNs, Diffusion models
Other: Linux, Docker, AWS, Git