Salma **Kazemi Rashed**

PhD student

About me

I'm deeply committed to hard work and continuous learning, with a particular passion for programming and machine learning. I got my Master's degrees in Electrical Engineering and Bioinformatics, which helped me get proficient at Mathematics, Statistics, and AI/ML fields. I specialize in developing novel algorithms for analyzing large datasets. During my PhD, I played a central role in diverse applied ML projects. From scrutinizing GWAS microscopic screens to navigating histopathology datasets with computer vision techniques, and delving into biomedical text mining with Natural Language models, I've consistently innovated, either developing models from scratch or adapting existing ones to suit project needs. Additionally, I've mentored master's students, fostering their growth while advancing project objectives.

My enthusiasm for tackling challenging applied ML projects remains undiminished, fueled by the unwavering support of my loving family, including my daughter and husband, who inspire me each day.

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Salma Kazemi Rashed

https://github.com/SalmaKazemiRashed

Professional Skills

Programming | Machine Learning | Computer vision | Big Data Analysis | Explainable ML | Natural Language Processing

EDUCATION

2020-ongoing — **PhD** — Lund, Sweden

Cell Death, Lysosomes, and AI group

Deep learning for information extraction from biomedical data including high-content microscopic cell image and histopathological slides

2019-2020 — **Master's Degree** — Lund, Sweden

Bioinformatics

Unsupervised ML for large-scale microscopy image processing.

Degree: VG

2014-2017 — **Master's Degree** — Tehran, Iran

Electrical Engineering, Telecommunications

GPA: 4/4 (18.61/20)

2009-2014 — **Bachelor's Degree** — Tehran, Iran

Electrical engineering,

GPA: 3.53/4 (16.83/20)

WORK EXPERIENCE

2020-2024 — **PhD student** — Lund, Sweden

2014-2018 — **Research student** — Tehran, Iran

Cognitive Radio Labratory

Interactive Machine learning (Q-Learning) for improving Channel Access Quality in Cellular networks.

2014 — **Intern** — Tabriz, Iran

Delta Connection Provider Co. for DWDM project of ZTE Corporation (6 months)

TECHNICAL SKILLS

Data Analysis	**Tensorflow, Pytorch** **High performance computing/Slurm** **Conda and Singularity/Apptainer** **Git (version control)** **Snakemake** **SQLite and SQL** **Flask and Web Programming**
Office Automation	**MS Office (Excel, Word, PowerPoint)** **LaTeX**

</> PROGRAMMING LANGUAGES

- **C/C++**
- **Python**
- **Matlab**
- **Bash**
- **R**

Soft Skills and Strengths

Creativity | Curiosity | Self Confidence | Ability to Plan and Organize | Autonomy | Enthusiasm for Details | Problem Solving | Team Working | Leadership | Ability to explain | Documenting

Languages

- English - Professional Knowledge
- Swedish - Moderate Knowledge
- Persian - Native Language
- Azeris - Native Language

Projects and Competitions

- Deep Learning for Lung histology scoring (Histology)
- Cell Hunter: An open-source citizen science tool development for collecting microscopy image annotations (Cell Hunter)
- Data-driven modelling and learning for cancer immunotherapy hackathon elliit focud period
- NGS data (RNA-seq) analysis competition (NGS competition)
- Improving Channel Access Quality using Online interactive ML Methods in Cognitive Radio
- Implementation of bubble sort algorithm on FPGA using QuartusII.
- Simulation of various types of quantizers in speech coding, differential encoders, and image compressors and evaluation of linear block codes and convolutional codes using MATLAB.
- Implementation of a compiler for a user-defined simple programming language using C++

Future Plan

I aspire to deeply contribute to the real-world proplems with AI/ML. I have a profound passion for diving into the industry and actively engaging with diverse types of data and new ML algorithms, which happens to be my ultimate fascination. Furthermore, I am enthusiastic about broadening my knowledge and enhancing my communication skills, collaborating with larger groups, embracing challenging tasks, and constantly seeking to learn and grow.

PUBLICATIONS

2023 **An annotated high-content fluorescence microscopy dataset with Hoechst 33342-stained nuclei and manually labelled outlines**, M. Arvidsson, S. Kazemi Rashed, S. Aits, *Data in Brief*, https://doi.org/10.1101/2023.05.12.540340

2023 **Deep learning for rapid and reproducible histology scoring of lung injury in a porcine model**, I. A. Silva, S. Kazemi Rashed, L. Hedlund, A. Lidfeldt, N. Gvazava, J. Stegmayr,V. Skoryk, S. Aits,D. Wagner, *BioArxiv*, https://doi.org/2023:2023.05.12.540340

2023 **EasyNER: A Customizable Easy-to-Use Pipeline for Deep Learning- and Dictionary-based Named Entity Recognition from Medical Text**, R. Ahmed, P. Berntsson, A. Skafte, S. Kazemi Rashed, M. Klang, A. Barvesten, O. Olde, W. Lindholm, A. Lamarca Arrizabalaga, P. Nugues, S. Aits, *Arxiv*, https://doi.org/10.48550/arXiv.2304.07805

2020 **Power allocation for D2D communications using max-min message-passing algorithm**, S. Kazemi Rashed, R. Asvadi, S. Rajabi, Seyed A. Ghorashi, M. G Martini, *IEEE Transactions on Vehicular Technology*, 10.1109/TVT.2020.2995534

Workshops and conferences

- NLP Seminar Series (*AI Sweden , 2022-2023*)
- Data-driven modelling and learning for cancer immunotherapy (*ELLIIT, 2022*)
- COMPUTE PhD school (*2021-2023*)
- AI Lund workshops and seminar (*2021-2023*)
- Swedish bioinformatics workshop, 2021.
- The Impact of Large Language Models (LLMs) on Life Sciences
- ISMB/ECCB 2023

References

References available upon request.