

# Aviv Gelfand

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## Summary

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- 1st year MSc candidate in Data Science (HUJI); Thesis: Dimensionality reduction of Deep Learning problem space through statistical methods and graph theory. BSc in Statistics and Data Science (HUJI; GPA 89)
- Dedicated to long-term growth in a cutting-edge company with a positive atmosphere; available for 80%-100% time role as a Data Scientist / ML or AI Researcher / Engineer / SW Dev.
- Demonstrated success in AI and software development through academic/private projects and roles, with a track record of implementing machine learning models to solve complex problems requiring strong collaboration and rapid self-learning skills, consistently delivering efficient and accurate models.

## Experience

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### NLP Data Scientist / Research Assistant

Oct 2023 – May 2024

*The Hebrew University of Jerusalem*

- Successfully executed a Supervised-Fine-Tuning training of large language models to classify defendant arguments in trials for a broader statistical legal research project; reduced labeling time and errors, replacing manual tagging with LLM-based tagging.
- Drove strategic alignment by delivering situational analyses and action plans to US-based stakeholders, effectively prioritizing objectives and focusing efforts to meet deadlines.
- Dealt with significant imbalance using embedded cluster stratified sampling methods. Corrected errors in the labeled data. Reached over 90% accuracy and 80% F1 scores in most target labels. Substantially reduced model complexity and training time using efficient sampling.
- Acquired all relevant knowledge in PyTorch and LLMs through fully independent learning, unguided.
- Presented findings at a prominent statistics and data science conference in May 2024.

### Statistics & Machine Learning Instructor

Oct 2022 – Sept 2023

*Upscale Analytics*

- Built dozens of ML hands-on projects for a Machine Learning and Statistical Inference course, with constant feedback from a Senior Data Scientist (and head lecturer), Michael Winer.
- Instructed data analysts through their first steps in statistical inference and classic machine learning: linear and logistic regressions, ensemble learners such as random forests & XGBoost, and clustering methods.
- Advanced from teaching assistant to instructor, then to a partner role. 3 successful semesters of weekly TA sessions with a significant presence of students.

### Research & Development Assistant

Apr 2022 – Mar 2023

*The Hebrew University of Jerusalem*

- Self-taught and programmed smart contracts with a C++-based programming language; developed simulations interface using react.js.
- Designed and analyzed online surveys; conducted literature and academic peer reviews. Web-scraped data monthly.

### Data Analyst & Research Team Leader

Dec 2018 – Dec 2020

*Israel Defense Forces*

- Conducted research, assessments, and analytics for high-ranked decision-makers. Triplicated, updated, and maintained strategic databases while collaborating with programmers and economists.
- Led cross-organizational projects resulting in several two in-depth research papers with an unprecedented scale of collaboration between two research branches.

## Education

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**The Hebrew University of Jerusalem**

*Oct 2023 – July 2026*

*MSc in Statistics & Data Science*

- Thesis on Dimensionality Reduction in Deep Learning (LLMs focused), guided by Prof. Ariel Jaffe.

**The Hebrew University of Jerusalem**

*Oct 2021 – Aug 2024*

*BSc in Statistics & Data Science*

- GPA: 89 ; Also completed 33% of the required courses for master's degree while working in several roles.

## Technologies

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**Scripting Languages and tools:** Python, Java, Solidity (C++ based), R, SQL, JS

**Programming Libraries:** Pandas, PyTorch, Transformers, SKlearn, LLM's SDK (OpenAI, groq, etc), Selenium, Beautiful soup

**GenAI:** Prompt engineering (COT, etc), Crusur, Claude, ChatGPT, Perplexity, 'Langtalks' fan

**EDA:** Basic and complex Visualizations, Advanced Statistical Inference

**ETL:** Cleaning, Encoding / Embedding, Imputing

**ML:** Efficient Sampling, Feature Engineering, Parameters Optimization, Evaluation Metrics

**NLP:** Fine-Tuning open source LLMs, LORA, PEFT, text cleaning techniques with Regex and NLTK

**CI/CD:** GIT, Linux, SLURM Cluster system, GitHub workflows, shell scripts

**Big Data Frameworks:** Big Query, Data-Bricks, Apache Spark

## Notable Projects

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**Fine Tuning Large Language Models**

[GitHub Repo](#) 

- This repository presents my (Aviv Gelfand) work on applying supervised fine-tuning (SFT) methods to build classifiers for labels as part of a broader project in statistical legal research collaboration led by Dr. Adi Leibovitch and Sharon Levy from The Hebrew University of Jerusalem Faculty of Law, Prof. J.J.Prescott and Grady Bridges from the University of Michigan Law School.

**De Grandmizer Shtick! GenAI Hackathon**

[GitHub Repo](#) 

- De Grandmizer Shtick is a Python application that generates conversations using GPT-3 and converts them into audio files using the Google Cloud Text-to-Speech API.
- The project is designed to help create the illusion of an occupied home to intimidate burglaries and was created during HUJI Generative AI Hackathon 2023.

**Driver Behavior Detection Using Smartphone Signals**

[GitHub Repo](#) 

- A Digital Signal Processing journey to an application for detecting and reporting aggressive bus driver behaviors.