

# Ali Aghababaei

Padua, Italy  
+39 351 611 4784  
ali.aghababaei@studenti.unipd.it  
[linkedin.com/in/aliaghbabaeii](https://linkedin.com/in/aliaghbabaeii)

## Education

Sep 2022 – Jul 2025 **M.Sc. in ICT for Internet and Multimedia, University of Padova, Italy**

- GPA: 110 / 110 (Top 5%)
- Thesis: *Application of Integrated Gradients explainability to socio-psychological semantic markers*
- Supervisor: Prof. Tomaso Erseghe

Oct 2023 – Feb 2024 **Erasmus Exchange Program, Warsaw University of Technology, Poland**

- GPA: 4.75 / 5.0

Sep 2014 – Sep 2019 **B.Sc. in Electrical Engineering, Ferdowsi University of Mashhad, Iran**

- GPA: 14.46 / 20
- Thesis: Design and Construction of Electronic Pest Repellent for Use in Homes
- Supervisor: Professor Mohammad Bagher Naghibi Sistani

## Research Interests

- Distributed Systems
- Data-Driven Modeling
- Deep Learning
- Network Science
- Data Science
- Machine Learning
- Explainable Artificial Intelligence
- Human-AI Collaboration

## Language Proficiency

English Fluent (C2) — **IELTS Academic: 8.5** (Listening: 8.5, Reading: 8.5, Speaking: 8.5, Writing: 7.5). Test date: 10 December 2024

Italian A2

Persian Native

## Research and Work Experience

- Jun 2024 – Dec 2024 **Research Assistant, University of Padova, Italy**
- Extended my master's thesis on model interpretability, leading to a paper.
  - Applied Integrated Gradients to transformer models (BERT, RoBERTa) for socio-psychological semantic markers (e.g., agency, fear).
  - Validated predictions against human-annotated datasets (Slurs, Twitter #COVID) to enhance transparency in NLP.
- Summer 2018 **Intern, Sorak Taban Electricity Distribution Company, Iran**
- Developed electrical installation drawings for pole-mounted transformer sites.
  - Calculated transformer power requirements and ensured proper infrastructure planning.
  - Coordinated with stakeholders including municipal and public authorities.

## Publications

- Preprint Aghababaei, A., Nikadon, J., Formanowicz, M., Bettinsoli, M. L., Cervone, C., Suitner, C., Erseghe, T. (2025). *Application of integrated gradients explainability to sociopsychological semantic markers*. arXiv:2503.04989 [cs.CL]. <https://arxiv.org/abs/2503.04989>
- Journal Aghababaei, A., Aghababaei, F., Pignitter, M., Hadidi, M. (2025). *Artificial Intelligence in Agro-Food Systems: From Farm to Fork*. *Foods*, 14(3), 411. <https://doi.org/10.3390/foods14030411>

## Awards and Honors

- 2025 Ranked in the top 5% of students in ICT among those entering in 2022 at University of Padova.
- 2014 Ranked in the top 1.12% (2500 out of 222,000) in the Iranian Nationwide University Entrance Exam.
- Placed among the top 0.5% of students in the NODET (National Organization for Development of Exceptional Talents) high school entrance exam (60,000 candidates).

## Notable Projects

- Machine Learning **Classification of Ancient Scripts**: Developed classifiers for ancient Japanese cursive (Kuzushiji) script using Support Vector Machines and Neural Networks in Python.
- Computer Vision **Image Repair using SIFT**: Restored corrupted images using image patch matching, implemented in C with the OpenCV library.
- Pattern Recognition **Fashion Item Classification**: Used Neural Networks in Octave to classify the Fashion-MNIST dataset consisting of 10 fashion item types.
- Web Applications **Bookstore Website Development**: Collaborated on a full-stack web app using HTML, CSS, JavaScript, and Node.js, building both the front-end and back-end of an online bookstore.

## Skills and Tools

- Programming Languages Python, C, MATLAB

Deep Learning	PyTorch, TensorFlow, Keras
Frameworks	
NLP Libraries	SpaCy, Hugging Face Transformers, NLTK, Gensim
Model	Captum, SHAP, LIME
Interpretability	
Computer Vision	OpenCV, PIL, Scikit-Image
Machine Learning	Scikit-learn, XGBoost, LightGBM
Visualization	Matplotlib, Seaborn, Plotly
Data Handling	Pandas, NumPy, SQL
Version Control	Git, Bitbucket
General Tools	Microsoft Office, LaTeX

## Hobbies

Reading, fitness, football, and learning languages

## References

Prof. Tomaso Erseghe	Associate Professor, University of Padova	<i>tomaso.erseghe@unipd.it</i>
Prof. Marco Giordani	Associate Professor, University of Padova	<i>marco.giordani@unipd.it</i>
Prof. Federica Battisti	Associate Professor, University of Padova	<i>federica.battisti@unipd.it</i>
Dr. Milad Hadidi	Senior Scientist, University of Vienna	<i>milad.hadidi@univie.ac.at</i>
Prof. Mieczysław Muraszkiewicz	Full Professor, Warsaw University of Technology	<i>mieczyslaw.muraszkiewicz@pw.edu.pl</i>