Tobia **Poppi**

PhD Candidate · Artificial Intelligence Engineer

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"Empowering AI to be a Safe & Trustworthy tool for Society."

Summary

I'm a PhD candidate in the National PhD in Artificial Intelligence at the University of Pisa, specializing in **AI Safety**, **Responsible AI**, and **Trustworthy AI**. My research focuses on advancing **Generative AI** and **Multimodal architectures**, aiming to bridge the gap between cutting-edge deep learning technologies and ethical alignment with human values. Passionate about leveraging AI to solve complex societal challenges, I am dedicated to ensuring AI systems are **safe**, **transparent**, and **aligned** with responsible principles, driving innovation with a human-centric approach.

Knowledge and Technical Skills

Topics	Responsible AI, Safe AI, Generative AI, Multimodal Learning, LLM & LMM Finetuning, NLP, Deep Learning
Frameworks and Other	PyTorch, Numpy, Pandas, Scikit-learn, Slurm, Git, Unix, OpenCV, Tensorflow
Programming	Python, Bash, C++, C, JAVA, LaTeX

Experience

AImageLab - University of Modena and Reggio Emilia
PhD Candidate   *Modena, Italy*   *Nov. 2023 - Present*

- Research during the Doctorate at AImageLab covers these topics in Artificial Intelligence: Multimodal Learning, Generative AI, Responsible AI, AI safety, LLMs Finetuning, Natural Language Processing.
- Fine-tuned an open source LLM to convert between safe and unsafe sentences, starting from a small self-curated dataset.
- Designed and implemented a new CLIP-like Multimodal architecture to prevent unsafe and inappropriate content retrieval and generation.
- Author of a Large-scale Multimodal dataset in AI Safety and Responsible AI domain.

Experis s.r.l.
Lecturer   *Modena, Italy*   *Jan. 2025 - Mar. 2025*

- Master AI and ML for Smart Factory

AImageLab - University of Modena and Reggio Emilia
Research Fellow Intern   *Modena, Italy*   *May 2023 - Nov. 2023*

- Curricular intern in Trustworthy AI for Deep generative models.

Hipert Lab - University of Modena and Reggio Emilia
Research Fellow   *Modena, Italy*   *Feb. 2022 - Aug. 2022*

- Implementation of geometric methodologies based on the model and implementation of machine learning techniques, driven by data, in the context of 6D pose estimation.

Hipert Lab - University of Modena and Reggio Emilia
Research Fellow Intern   *Mantova, Italy*   *May 2021 - Sep. 2021*

- Internship for Bachelor's Degree; Thesis Title: "Labeling: the best tools available and their application for detection of people e road signs and for poses estimation of 3D objects".

Publications

2025 Conference on Computer Vision and Pattern Recognition (CVPR)   *Nashville, Tennessee, USA*

Hyperbolic Safety-Aware Vision-Language Models
Tobia Poppi, Tejaswi Kasarla, Pascal Mettes, Lorenzo Baraldi, Rita Cucchiara

HySAC, Hyperbolic Safety-Aware CLIP, models hierarchical safety relations to enable effective retrieval of unsafe content, dynamically redirecting it to safer alternatives for enhanced content moderation.

2024 European Conference on Computer Vision (ECCV)   *Milano, Italy*

Safe-CLIP: Removing NSFW Concepts from Vision-and-Language Models
Samuele Poppi, Tobia Poppi, Federico Cocchi, Marcella Cornia, Lorenzo Baraldi, Rita Cucchiara

Vision-and-language model designed to mitigate the risks associated with NSFW content in AI applications. Safe-CLIP is fine-tuned to serve the association between linguistic and visual concepts, ensuring safer outputs in text-to-image and image-to-text retrieval and generation tasks.

Education

University of Pisa *Modena, Italy*

PhD in Artificial Intelligence; *National PhD in Artificial Intelligence for Society* *Nov. 2023 - Present*

University of Modena and Reggio Emilia *Modena, Italy*

Master's Degree in Computer Engineering; *Grade: 110/110 with honours* *Sep. 2021 - Oct. 2023*

Norwegian University of Science and Technology *Trondheim, Norway*

Erasmus+ Exchange Semester *Aug. 2022 - Dec. 2022*

University of Modena and Reggio Emilia *Mantova, Italy*

Bachelor's Degree in Computer Engineering; *Grade: 105/110* *Sep. 2018 - Oct. 2021*

Enrico Fermi Technical Industrial Institute *Modena, Italy*

High school Diploma in IT and telecommunications *Sep. 2013 - Oct. 2018*

Participation to National and European Projects

- Horizon Europe project **"ELIAS - European Lighthouse of AI for Sustainability"**, co-funded by the European Union
- PNRR project **"FAIR - Future Artificial Intelligence Research"**, co-funded by the European Union
- Horizon Europe project **"ELSA - European Lighthouse on Safe and Secure AI"**, co-funded by the European Union

Program Committees

2024	**Peer Reviewer**, Computer Vision and Image Understanding (CVIU) - Journal	
2024	**Peer Reviewer**, Pattern Recognition (PR) - Journal	
2024	**Peer Reviewer**, European Conference on Computer Vision (ECCV)	*Milan, Italy*
2024	**Peer Reviewer**, IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)	*Seattle, USA*

Languages

Italian Mother tongue
English Writing: *Fluent*, Reading: *Fluent*, Listening: *Fluent*

Interests

Professional Artificial Intelligence, Responsible AI, Generative AI, AI Safety, Trustworthy AI, Alignment Problem, Computer Vision
Personal Pool-Billiard, Sport, Music, Art, Cinema