

# Giulio Starace

May 28, 2023 | [giulio.starace@gmail.com](mailto:giulio.starace@gmail.com) | [github.com/thesofakillers](https://github.com/thesofakillers) | [giuliostarace.com](https://giuliostarace.com)

## EDUCATION

### MSc Artificial Intelligence

University of Amsterdam

GPA: 8.29 | Amsterdam, The Netherlands

Sep. 2021 – Aug 2023 (ongoing)

- Current thesis direction: Natural language and Goal Misgeneralization In Offline Reinforcement Learning
- Topics of note: Machine Learning, Deep Learning, Natural Language Processing, Information Retrieval, Reinforcement Learning, Spiking Neural Networks

### ABC Summer School - Computations in Consciousness and Perception

University of Amsterdam

Amsterdam, The Netherlands

June 2022

- 2-week full-time computational neuroscience programme. Developed Project proposal available at [giuliostarace.com/ltm](https://giuliostarace.com/ltm).

### BSc Hons. in Natural Sciences (Physics & Computer Science)

Durham University

GPA: First Class Honours | Durham, UK

Oct. 2016 – July 2019

- Topics of note: Statistics, Vector Calculus, Linear Algebra, Thermodynamics, Quantum & Particle Physics, Databases, Algorithms and Data-structures, Cryptography and Information, Compiler Design, Operating Systems, Computer Vision

## EXPERIENCE

### University of Amsterdam - AIRLab

Part-time Researcher (Research Assistant)

Amsterdam, The Netherlands

Apr 2022 – Oct 2022

- Cross-lingual adaptation of large language models (LLMs). Paper and Code: [github.com/thesofakillers/clafic](https://github.com/thesofakillers/clafic)
- Proposed novel “Post-Hoc Disentanglement via Vessel Adapters (PHoDiVA)” method.

### ESO - European Southern Observatory

Research Engineer

Cerro Paranal, Chile

Sep 2020 – Sep 2021

- High-resolution forecasting of Astronomical Seeing using Machine Learning methods, using ARIMA and LSTM
- Led the development of a unified data processing and evaluation pipeline: [pypi.org/project/nowcastlib](https://pypi.org/project/nowcastlib)

Software Engineering Intern

Aug 2019 – Jan 2020

- Designed, developed, tested and deployed a system for displaying information from the observatory’s several ticket systems in unified and personalized way via Microsoft Graph API.

### Video.io - startup

Machine Learning Engineer

Remote, Anywhere

Feb 2020 – June 2020

- Worked on implementing abstractive summarization of dialogic video. (Pandas, Google Cloud Speech API).
- Real time speech to text captioning of live video streams (NodeJS Streams, FFmpeg, HLS/DASH video).
- Revamped full-stack of internal experimental website (NodeJS, GraphQL, PostgreSQL, Docker, NGINX, React).

### JAXA - Japan Aerospace Exploration Agency

Southwestern University

Sagamihara, Japan

Aug 2018 – Oct 2018

- Developed software to estimate visibility of satellite given orbit simulation and thermal constraints.
- Performed multi-parameter regression on ro-vibrational dataset so to characterize starburst galaxy NGC253.

## PROJECTS & PUBLICATIONS

- Starace et al., *Probing LLMs for Joint Encoding of Linguistic Properties*. Under review at EMNLP 2023.  
Code: [github.com/thesofakillers/bert-infoshare](https://github.com/thesofakillers/bert-infoshare)
- van der Togt et al., *[Re] Badger Seeds: Reproducing the Evaluation of Lexical Methods for Bias Measurement*, 2022.  
ReScience C 8, #40. 10.5281/zenodo.6574704.
- **GPTrueOrFalse** Browser extension showing likelihood that given body of text was generated by OpenAI’s GPT-2.
- **iclingo** Jupyter Kernel for answer set programming with clingo.
- **bLANS** Tool for converting sane-LaTeX to ANS-flavoured LaTeX and viceversa.

## MISCELLANEOUS QUALITIES AND SKILLS

### Languages

English (Fluent), Italian (Fluent), Spanish (Professional)

### Programming Languages

Python, Javascript, SQL, C/C++, HTML/CSS

### Libraries

NumPy, PyTorch, Pandas, HuggingFace, matplotlib, OpenCV, statsmodels, sklearn

### Frameworks and Specs

PyTorch Lightning, WandB, NodeJS (Express), GraphQL, React

### Technologies

Vim, Git, tmux, VSCode, ssh, L<sup>A</sup>T<sub>E</sub>X, FFMPEG, Docker, SLURM