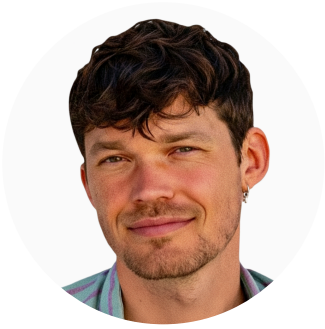
Marnix Van Soom

RESEARCHER/CREATIVE/DEVELOPER



A creative and sensitive mind with strong technical foundations. Working between probabilistic machine learning and media art. Trying to understand big questions. Making things with others.

REACH

marnixvanso.om

mvsoom

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FOCUS

Probabilistic machine learning
Theoretical foundations of inference
Real-time sensor fusion and inference
Creative AI systems
Human-machine interaction
Interdisciplinary collaboration

TECHNICAL

Python
Julia
R
C/C++
JavaScript
JAX
PyTorch
Linux
Docker
Raspberry Pi
Google Cloud

LANGUAGES

Dutch	native
English	fluent
French	intermediate
Portuguese	basic

INTERESTS

Running
Mindfulness
Playing drums

SELECTED RESEARCH WORK

complete list at marnixvanso.om/research

BAYESIAN NONPARAMETRIC GLOTTAL INVERSE FILTERING
PhD thesis

Accurate and real-time decomposition of speech into separate contributions from the vocal folds and the vocal tract.

A WEAKLY INFORMATIVE PRIOR FOR RESONANCE FREQUENCIES
Article

I derive a new prior for resonance frequencies from the maximum entropy principle.

GROWING NETWORKS WITH A GIVEN ASSORTATIVITY COEFFICIENT
Research notes

I propose a novel minimally biased way to sample or grow assortative networks.

NEXT LEVEL NAMING GAME: COMMUNICATION IN SOCIAL NETWORKS
Pluto notebook

How do successful communication strategies emerge, and by which social networks?

SELECTED CREATIVE WORK

complete list at marnixvanso.om/media

Feb 2026
SUNSTREAM.TV – Online stream forecasting the Sun in real-time

Ongoing cooperation with Jo Caimo (artist) and James Walsh (Cambridge) to predict the state of the Sun eight minutes ahead from continuously incoming satellite data. I am developing a high-quality model based on the recent SDO-FM foundation model to make this possible for the first time. I built a custom pipeline that compiles C++ code and PyTorch Lightning to WebAssembly to run the model natively in web browsers.

Apr 2025
GRAPHOMANIAC – Interactive AI that responds creatively in the moment

Online installation (click to visit) emitting a continuous stream of observations and inner thoughts about its environment. The AI has real-time vision and reacts instantly and naturally to whatever it perceives.

Nov 2024
SPELLS & PROMISES – Exposition

I conceived and led the production of this contemporary art exhibition, which brought together seven artists working with emerging technologies as artistic media. The show was picked up by several leading art blogs: ofluxo.net, fakewhale.xyz, saliva.live, and kubaparis.com.

Sep 2024
NEO SEER – 3D-printed sculpture housing autonomous AI

Collaboration with Mathias Mu (Royal Academy of Fine Arts Antwerp) where we designed a biomorphic 3D-printed sculpture hosting autonomous AI. I gathered training data, performed data augmentation, tested and deployed the LLM pipeline for continuous high-throughput processing, and installed it on an embedded Raspberry Pi with robust communication and fault tolerance. We showed this piece at several exhibitions, and it later became a subject of study by the PALETTES research group (KU Leuven).

HIGHER EDUCATION

MSC IN PHYSICS & ASTRONOMY (CUM LAUDE)
UGent

Acquired strong fundamentals in mathematical modeling and scientific coding, with thesis work published in Scientific Reports.

2010 - 2017

PHD IN COMPUTER SCIENCE
Vrije Universiteit Brussel & UAntwerpen

PhD combined with government artist grant. Working on Bayesian nonparametrics, signal processing, and network theory.

2018 - 2026 (defence in June)