# Mattis Megevand

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## Experience

**Odoo**                                                                                  Oct. 2023 – Present  
*Software Engineer*                                                                       *Ramillies, Belgium*
– Investigated and resolved software bugs across the Odoo codebase.
– Gained experience in troubleshooting large-scale software systems.
– Developed multiple proofs of concept for Odoo (RAG, document similarity...).

**Thales**                                                                                Feb. – Aug. 2023  
*Research Intern*                                                                         *Gennevilliers, France*
– Developed a neural network compression framework.
– Devised a novel compression method that achieves pruning and low-rank approximation through learned floating-point quantization; patent pending.
– Achieved a 0.01% increase in accuracy using just 0.78% of the BOPS for LeNet on MNIST.

**Grenoble Informatics Laboratory**                                                       Jan. – Jun. 2022  
*Research Intern*                                                                         *Grenoble, France*
– Delved into data augmentation techniques for speech recognition.
– Realized a significant accuracy improvement in speech recognition through data augmentation.
– Implemented a tool for augmenting audio files using diverse methods.

## Education

**ENSIMAG**                                                                               2021 – 2023  
*Master of Science in Informatics at Grenoble*                                            *Grenoble, France*
– Master's program taught entirely in English offered by ENSIMAG and Grenoble Alpes University.
– Specialization in *"Data Science and Artificial Intelligence"*.
– Graduated with high honours.

**Grenoble Alpes University**                                                             2018 – 2021  
*Bachelor of Science in Computer Science*                                                 *Grenoble, France*
  Graduated with honors.

## Side Projects

**invertornot.com**
– Developed and deployed an AI model to determine optimal image inversion for dark mode.
– Created a custom dataset, fine-tuned EfficientNet, and exported the model for ONNX inference.
– Built a high-performance API using FastAPI and Redis, processing 25k+ images daily.

**stacky**
– Developed and published a VS Code chat assistant extension to enable LLM usage during debugging.

**Various exercises**
– **AI/ML** Implementation of various papers such as GAN, SRGAN, AE, VAE, VQ-VAE, Style transfer...
– **Programming/math-oriented** such as *Advent of Code, Project Euler, Cryptopals...*

**Miscellaneous projects**
– `voxel_space.zig` Voxel Engine made from scratch in Zig using Sokol.
– `raytracer.zig` Simple raytracer made in Zig from scratch.

**Open Source**
– Implemented LR schedulers for tinygrad an alternative deep learning framework to PyTorch.

**Languages**
– **French** Native
– **English** Fluent

**Technical skills/Tools**
– **Languages** Python, JS, SQL, C, Zig, OCaml
– **ML** PyTorch, transformers, diffusers, ONNX
– **Web** Svelte, Astro, FastAPI, express.js
– **Misc.** NumPy, Pandas, PostgreSQL, Redis