Thi Thanh Hien Nguyen

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Profile — Recent graduate in Modeling and Artificial Intelligence with a robust background in statistics, machine learning, and deep learning. Passionate about advancing research through the application of mathematics and artificial intelligence in health and biology. Recognized for being curious, autonomous, adaptive, and highly collaborative.

Skills

- **Programming Languages:** Python, R, C, C++, SQL, Java
- **Data Science Tools:** Pandas, Numpy, Seaborn, Matplotlib, OpenCV
- **ML/DL Frameworks:** Scikit-learn, TensorFlow, PyTorch, HuggingFace
- **Techniques:** Deep Learning, Machine Learning, Computer Vision, Explainable AI, Optimization, Data Analysis
- **Languages:** French *(Full Professional Proficiency)*, English *(Autonomous)*, Vietnamese *(Native)*

Experience

Pierre Fabre Dermo-Cosmétique **Sep 2022 – Feb 2025**
Data Science Apprentice *Toulouse, France*
Focused on data-driven analysis, R&D, and applying artificial intelligence in the dermo-cosmetic industry.
Relevant missions:

Analysis of sensory profiles and consumer data:

- Reviewed literature to validate analysis methodologies.
- Improved and maintained an R Shiny application for statistical analysis.
- Developed a quality control tool for sensory test data.
- Built an application to monitor hairstylist performance.

Optisen Project - Predicting consumer preferences and skincare sensory profiles *(Engineering Thesis Project)*:

- Predicted consumers' overall appreciation based on sensory profiles.
- Developed a multi-objective model predicting sensory characteristics from chemical compositions.
- Integrated explainable AI methods (SHAP, LIME) for robust result interpretation.
- Designed a user interface to facilitate the new product formulation process.

Personal Projects

Independent Study: Multi-omics Data Analysis and Integration **Mar 2025**
Material from Summer School on Multi-omics Data Analysis and Integration, 2023

- Developed skills in analyzing and integrating RNAseq, metabolomics, lipidomics, and proteomics datasets.
- Applied statistical methods such as RGCCA and mixOmics to integrate and interpret complex data.
- Gained proficiency in network-based techniques such as WGCNA and SNF for biological insights.
- Contextualized data analysis results using metabolic models, semantic web tools, and knowledge graphs.

Exploration of Geometric Deep Learning **Feb 2024 – May 2024**

- Followed the AMMI (GDL100) course and tutorials on geometric deep learning.
- Developed a model to predict molecular properties using Graph Neural Networks (GNNs).

University Projects

Predicting molecular energy from their geometric structure **Apr 2024 – Jun 2024**

- Represented molecules geometrically using the Coulomb matrix and scattering.
- Trained a regression model under physical constraints to predict molecular energy.

Movie recommendation system based on posters and plots **Mar 2024 – May 2024**

- Developed image analysis (CNN) and text analysis models (NLP – Transformers).
- Developed an interactive interface using Gradio.

Education

INSA Toulouse & INP-ENSEEUHT **Sep 2022 – Feb 2025**
Double Degree in Modeling and Artificial Intelligence *Toulouse, France*

- **Relevant Courses:** Modeling and Scientific Computation, Statistics, Machine Learning, Deep Learning, Data Analysis, Technologies for AI (Recommendation System, NLP, Explainable AI)

References

Maugis-Rabusseau Cathy *Professor, INSA Toulouse, cathy.maugis@insa-toulouse.fr*
Deguilhen Perrine *User and Sensory Expert, Pierre Fabre Dermo-Cosmétique, perrine.deguilhen@pierre-fabre.com*