

# GEBRAN Hanady

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Portfolio: <https://hanadyg.github.io/portfolio/>

## EDUCATION

### Master of Science - Informatics

#### Technische Universität München

📅 2021 – present

📍 Munich, Germany

- Machine Learning and Analytics major, Algorithmics and Software minors.

### Engineering degree (Master of science)

#### École polytechnique (I'X)

📅 2018 – 2022

📍 Palaiseau, France

- Computer Science major and Applied Mathematics minor.

### Intensive scientific training for competitive entry to top-tier engineering schools

#### École supérieure d'ingénieurs de Beyrouth (ESIB)

📅 2016 – 2018

📍 Beirut, Lebanon

- Ranked 1<sup>st</sup> at École polytechnique's international entry exam.

## EXPERIENCE

### 6-month quantum AI research internship

#### Fraunhofer IKS

📅 Oct. 2022 – present

📍 Munich, Germany

- Working on a quantum convolutional neural network.

### 5-month cognitive AI research internship

#### Télécom Paris

📅 Mar. 2021 – Aug. 2021

📍 Palaiseau, France

- Build a model that generated clustering and relevant descriptions as a cognitive process to exploit human reasoning based on Kolmogorov complexity and contrast.

### 3-month AI development internship

#### Fujitsu

📅 Jun. 2020 – Aug. 2020

📍 Palaiseau, France

- Designed operators for airflow pipeline.

### 7-month internship

#### Main à la pâte organization

📅 Sep. 2018 – Mar. 2019

📍 Montreuil, France

- Intervened in 50 classes for about 7 hours per class on scientific themes and hosted a science fair for 200 people.

## ASSOCIATIVE WORK

### 7-month volunteering (1h/week)

#### SNL/SNC

📅 Feb. 2021 – Aug. 2021

📍 Palaiseau, France

- Taught lessons for job-seeking adults in France.

### 1-year volunteering (3h/week)

#### Association Fibonacci

📅 Sept. 2018 – Aug. 2019

📍 Montreuil, France

- Provided lessons and activities for underprivileged children.

### 2-year membership

#### ESIB's Social Club academic team

📅 Sept. 2016 – June 2018

📍 Beirut, Lebanon

- Taught voluntarily to students entering ESIB during intensive summer sessions.

## PROJECTS

- Theoretical mathematics IDP (2022): Infinitely wide transformer networks and their Laplace operators.
- Meta freelance mission (2022): Mathematical statements in LEAN.
- Spiking neural networks RL project (2022): Reaching task with reinforcement learning in the Neurorobotics Platform.
- Delivery system software project (2022).
- Reinforcement learning project (2021): Tower defense game development and implementation of self-supervised reinforcement learning agents.
- Decision theory project (2021): Multi-criteria choice of energy production and its apportionment across renewable energy sources in Europe.
- ARTGAN (2020): Artwork synthesis with conditional generative adversarial networks.
- Artificial intelligence project nominated for the best 2<sup>nd</sup> year scientific project (2020): Game Theory and Machine Learning for Hanabi.
- Polytechnique hackathon 2<sup>nd</sup> prize winning algorithm (2019): Xview2 algorithm highlighting buildings on aerial images.

## SKILLS

- Programming languages: Python, Java, C++, R, Ampl, Lean.
- DevOps: Docker, CI/CD, Git.
- Data: SQL, MongoDB, Spark.
- Data Science and Machine Learning: PyTorch, TensorFlow, Scikit-learn, Keras, Pandas.
- Quantum computing: Qiskit, PennyLane.
- Robotics: Gazebo, Neurorobotics Platform.
- Cloud: AWS.

## LANGUAGES

- French: Native (C2)
- Arabic: Native (C2)
- English: Fluent (C1+)
- German: Lower intermediate (B1)

## INTERESTS & ACTIVITIES

- Opera: Took two courses, followed a seminar and attended over 20 performances.
- Cognitive science: Joined local labs for experiments and occasionally attended conferences.
- Manga: Particularly fond of the isekai genre and Hunter × Hunter.
- Cooking: Learning the essentials of French and Oriental pastry.