# Quentin GOUTALAND

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## Data Science projects

**Raw photos categorization** Repository 07/2022

The goal of this project is to predict the category of each photo among 10 using a CNN and write it in its exif metadata.
The dataset was formed scraping photos with Flickr API in Pyhon ($\simeq 15000$ photos in all).
Using transfer learning from MobileNet with freezed weights and a softmax head layer, I get a model with an accuracy of $93\%$ on the validation set.

## Skills

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| **Languages** | French (mother tongue) • English (fluent) |
| **Programming** | Python • C/C++ • SQL • Javascript • HTML • CSS |
| **Tools** | Numpy • Pandas • Matplotlib • Seaborn • Scikit-learn • Tensorflow |
| **Edition** | Latex • Beamer |
| **Others** | Jupyter Notebook • Mathematica • Octave |

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## Education

**October 2022** **PhD in Theoretical Physics, Université Paris Cité (UP Cité), France (Expected)**
Subject : Collective dynamics of passive and conformationally active membrane proteins
Supervisor : Jean-Baptiste Fournier
- Theoretical modelization and analysis using Statistical Mechanics and Statistical Field Theory.
- Numerical simulations using C.
- Numerical analysis using Python.

**2019** M.Sc. Physics of Complex Systems, Université Paris Saclay, France – with highest honors

**2018** M.Sc. ICFP Condensed Matter, Université Paris Saclay, France – with honors

**2016** B.Sc. in physics, Université Paris Saclay, France – with high honors

**2015** Prep school, Lycée Blaise Pascal, Clermont-Ferrand

## Experience

**June 2022 – September 2019** **Teaching | IUT Paris-Diderot, UP Cite, Paris**
- Mechanics labs (solid-solid frictions, 1 and 2 degrees of freedom oscillators, elastic collisions).
- Wave Optics tutorials (interferences, diffraction)

**June 2019 – March 2019** **Internship | MSC Paris, UP Cite, Paris**
- Subject : Active matter of field-interacting switching particles.
- I applied a theoretical modelization of a biological membrane in the point of view of statistical field theory.

**June 2018 – March 2018** **Internship | LPS, UP Sud, Orsay**
- Subject : Time-dependent Quantum Transport
- I learned andapplied a nonequilibrium formalism to study the dynamical Coulomb blockade.

**July 2017 – April 2017** **Internship | IFW, Dresden, Germany**
- I performed NMR measurements on a 1D spin chain of linarite to determine the presence of a multi-polar order.