Opportunities@MeLi

Code Exercise

# Data Scientist

### Description:

In the context of Mercadolibre's Marketplace an algorithm is needed to predict if an item listed in the marketplace is new or used.

Your tasks involve the data analysis, designing, processing and modeling of a machine learning solution to predict if an item is new or used and then evaluate the model over held-out test data.

To assist in that task a dataset is provided in `MLA\_100k\_checked\_v3.jsonlines` and a function `build\_dataset` to read that dataset in `new\_or\_used.py`.

For the evaluation, you will use the accuracy metric in order to get a result of 0.86 as minimum. Additionally, you will have to choose an appropriate secondary metric and also elaborate an argument on why that metric was chosen.

### Deliverables

The following items should be addressed in your solution keeping in mind collaborative development such as code reproducibility and legibility.

* The scripts or runnable notebooks should include the necessary code needed to define and evaluate a model.
* A document with an explanation on the criteria applied to choose the features, the proposed secondary metric and the performance achieved on that metrics. Optionally, you can deliver an EDA analysis with other format like .ipynb

## Appendix

Dataset schema

| {  "seller\_address": {  "country": {  "name": "Argentina",  "id": "AR"  },  "state": {  "name": "Capital Federal",  "id": "AR-C"  },  "city": {  "name": "San Cristóbal",  "id": "TUxBQlNBTjkwNTZa"  }  },  "warranty": **null**,  "sub\_status": [],  "condition": "new",  "deal\_ids": [],  "base\_price": 80.0,  "shipping": {  "local\_pick\_up": **true**,  "methods": [],  "tags": [],  "free\_shipping": **false**,  "mode": "not\_specified",  "dimensions": **null**  },  "non\_mercado\_pago\_payment\_methods": [  {  "description": "Transferencia bancaria",  "id": "MLATB",  "type": "G"  },  {  "description": "Acordar con el comprador",  "id": "MLAWC",  "type": "G"  },  {  "description": "Efectivo",  "id": "MLAMO",  "type": "G"  }  ],  "seller\_id": 8208882349,  "variations": [],  "site\_id": "MLA",  "listing\_type\_id": "bronze",  "price": 80.0,  "attributes": [],  "buying\_mode": "buy\_it\_now",  "tags": [  "dragged\_bids\_and\_visits"  ],  "listing\_source": "",  "parent\_item\_id": "MLA6553902747",  "coverage\_areas": [],  "category\_id": "MLA126406",  "descriptions": [  "{'id': 'MLA4695330653-912855983'}"  ],  "last\_updated": "2015-09-05T20:42:58.000Z",  "international\_delivery\_mode": "none",  "pictures": [  {  "size": "500x375",  "secure\_url": "https://a248.e.akamai.net/mla-s1-p.mlstatic.com/5386-MLA4695330653\_052013-O.jpg",  "max\_size": "1200x900",  "url": "http://mla-s1-p.mlstatic.com/5386-MLA4695330653\_052013-O.jpg",  "quality": "",  "id": "5386-MLA4695330653\_052013"  },  {  "size": "500x375",  "secure\_url": "https://a248.e.akamai.net/mla-s1-p.mlstatic.com/5361-MLA4695330653\_052013-O.jpg",  "max\_size": "1200x900",  "url": "http://mla-s1-p.mlstatic.com/5361-MLA4695330653\_052013-O.jpg",  "quality": "",  "id": "5361-MLA4695330653\_052013"  }  ],  "id": "MLA4695330653",  "official\_store\_id": **null**,  "differential\_pricing": **null**,  "accepts\_mercadopago": **true**,  "original\_price": **null**,  "currency\_id": "ARS",  "thumbnail": "http://mla-s1-p.mlstatic.com/5386-MLA4695330653\_052013-I.jpg",  "title": "Auriculares Samsung Originales Manos Libres Cable Usb Oferta",  "automatic\_relist": **false**,  "date\_created": "2015-09-05T20:42:53.000Z",  "secure\_thumbnail": "https://a248.e.akamai.net/mla-s1-p.mlstatic.com/5386-MLA4695330653\_052013-I.jpg",  "stop\_time": 1446669773000,  "status": "active",  "video\_id": **null**,  "catalog\_product\_id": **null**,  "subtitle": **null**,  "initial\_quantity": 1,  "start\_time": 1441485773000,  "permalink": "http://articulo.mercadolibre.com.ar/MLA4695330653-auriculares-samsung-originales-manos-libres-cable-usb-oferta-\_JM",  "sold\_quantity": 0,  "available\_quantity": 1 } |
| --- |