

# Unit tests in python

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June 18, 2021

## Some good practices

- Run tests before committing changes to source code.
- Should be **fast** (5-10 seconds to run *all* tests).
- Each test function name should have a postfix describing what we're testing:

```
test__function_name__what_property_we_are_testing
```

- One assertion per test.

# The hypothesis package

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```

import hypothesis.strategies as st
import numpy as np
import pytest
from hypothesis import given

from pypolygamma import PyPolyaGamma

from fall_2020.logistic_models.polya_gamma_vi.bayes_logreg.inference import (
    compute_polya_gamma_expectation
)

@given(
    b = st.floats(min_value=1, max_value=1),
    c = st.floats(min_value=-100, max_value=100),
)
def test_compute_polya_gamma_expectation(b, c):
    # Test that our computed polya gamma expectation for a PG(b,c) distribution
    # is close to the empirical mean of a bunch of samples (obtained from the pypolygamma library)
    pg = PyPolyaGamma()
    empirical_mean = np.mean([pg.pgdraw(b, c) for i in range(10000)])
    computed_mean = compute_polya_gamma_expectation(b,c)
    print(f"For b={b}, c={c}, the Monte Carlo mean was {empirical_mean}, and my function's value was {computed_mean}")
    assert np.isclose(empirical_mean, computed_mean, atol=.01, rtol=.05)

```

# Code fails to raise error when user specifies a non-positive real number for the first parameter **b** #49

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mikewojnowicz opened this issue on Feb 19 · 1 comment



**mikewojnowicz** commented on Feb 19 · edited ▾



For example:

```
from pypolygamma import PyPolyaGamma
pg = PyPolyaGamma()
b,c = -2, -1
values=[pg.pgdraw(b, c) for i in range(10000)]
assert all([x==0 for x in values])
```

The sampler returns all 0's, although one would expect it to raise an error.

I would have opened a PR myself, but I do not know how to code in C.

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone

Linked pull requests

Successfully merging a pull request may close this issue.

None yet



**slinderman** commented on Feb 20

Owner



Good catch! I think you can add an assert in `pgdraw` before the C code gets called.