Cython

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Hi!

- Stefan Behnel
- Software/Data Engineer & Trainer
- use Python since 2002
  - CPython core dev since 2019
- Cython dev
  - core dev since 2007
  - training and consulting (also in-house)
- work for TrustYou since 2017
TrustYou

- Terabytes of hotel guest reviews
  - non-literate brain dumps, 24 languages, collected from all over the Internet, surveys, portals, partners, ...

- Text and data analysis
  - sentiment, categorisation, trends, tops/flops...

- Sell information
  - tell hotels what to improve
  - tell chains how their brands or branches compare
  - tell portals which hotels to recommend
TrustYou Meta-Review

Rated 4.5/5 based on reviews from all travelers.

*Excellent romantic hotel. Close to Las Vegas Strip. Good for sightseeing and located near shopping areas. Awesome vibe.*

*Great location.*
Central location with great sightseeing, dining out and shopping. Decent, but pricey, parking. Good accessibility by car. Near to public transport and the airport.

*Good pool, acceptably clean.*

*Awesome vibe. Friendly atmosphere. Stylish hotel.*

*Facilities are outdated, but outdoor sports facilities are top-notch.*
Great buildings with nice entrance area and conference rooms. Nice grounds with great facilities for kids. Beautiful architecture. Smoking area is not nice. Handicap accessible facilities are all right.

*Great room.*
Great balconies and views, comfortable beds, and clean enough rooms. Inadequate minibars in older, poorly maintained rooms. Bathrooms are large but with substandard cleaning. Substandard furniture, A/C, TVs and kitchenettes. Shower can be a problem.

Good to know
- Pleasant hotel grounds
- Friendly atmosphere
- Great view
- Reception should be more attentive

https://trustyou.com
Some Tools we use at TrustYou

- NumPy
- SciPy
- Scikit-learn
- Pandas
- nltk
- spaCy
- lxml
- PyYAML
- Hadoop/PySpark
- ...

...
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Python logo with Cython text.
What is Cython used for?

1) Integrate native code with Python
2) Speed up Python code in CPython
3) Write C without having to write C

“We write C so you don’t have to”
Gradual Typing in Python
Gradual Typing in Python

static typing == fast & cumbersome

dynamic typing == easy & slowish
Gradual Typing in Python

static typing == fast & cumbersome

↕ gradual typing ↕

dynamic typing == easy & slowish
Gradual Typing

● Term coined 2006 by Siek & Taha
  - Blog post by Jeremy Siek (Univ. of Indiana/USA):
    https://wphomes.soic.indiana.edu/jsiek/what-is-gradual-typing/
  - Basis for Python’s PEP-484 type annotations

● Best mix of static + dynamic typing
  - dynamic typing for ease of development
  - optional static typing for safety, speed, documentation

● Use static types only where they help
  - don’t require them where they get in the way
Don’t type all your things!
What is Cython?

- **Pragmatic programming language**
  - “Gradual Typing for Python”
- **Optimising compiler**
  - Production proven
  - Widely used
- **All about «getting things done»**
  - Keeps focus on functionality, not boilerplate
  - Allows moving freely between Python and C/C++
  - As pythonic as you want, as low-level as you need
What’s new in Cython 3.0 ?

It’s Python
What’s new in Cython 3.0?

It’s Python 3
What’s new in Cython 3.0 ?

It’s Python 3 ...

... by default
What’s new in Cython 3.0?

- Python 3 by default
  - language level “3str”
- Python def-function compatibility
  - “binding” by default
- Binary special methods like Python
- Positional-only arguments (PEP 570)
- Annotations as strings (PEP 563)

https://github.com/cython/cython/milestone/58
Thanks!

Any questions?

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more info: www.trustyou.com