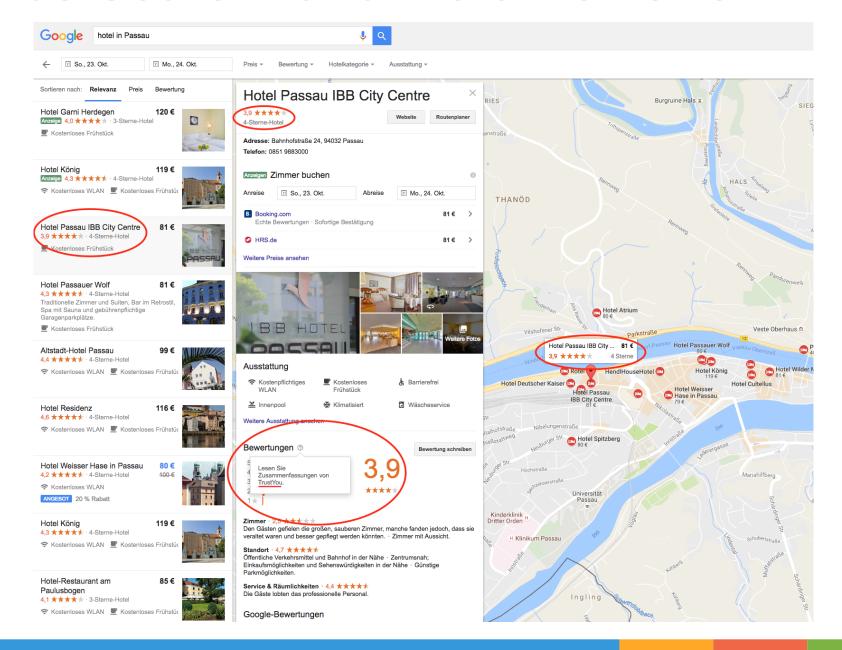# Lift your Speed Limits with Cython

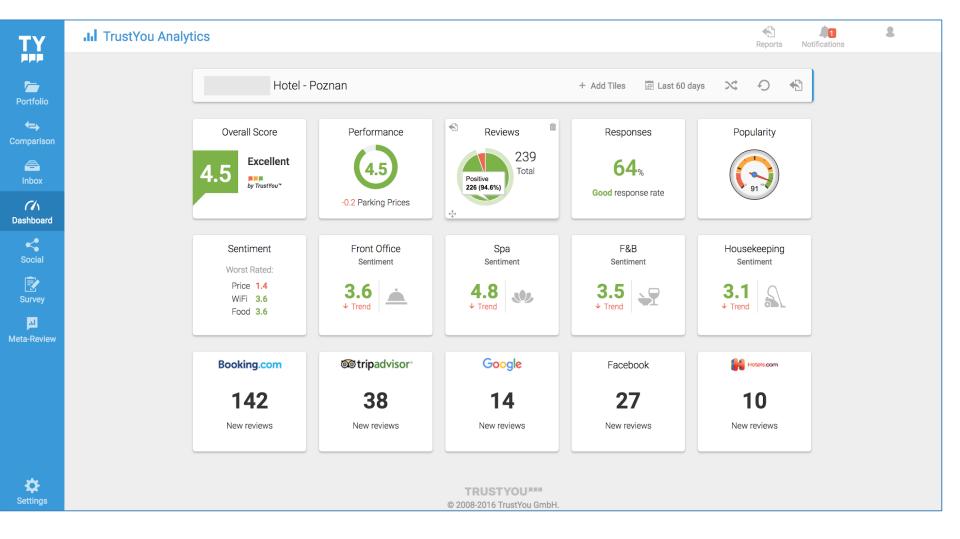Stefan Behnel <stefan.behnel@trustyou.com>

# TrustScore® and Meta-Reviews

# TrustYou Analytics



3 Mio. new text reviews every week

# Why do we use Python ?

- Great **programming language**
  - versatile, pragmatic, concise, readable
- **Community** is diverse, friendly and helpful
  - well supported and documented
- Excellent **libraries and tools**
  - big data, NLP, web services, automation, testing, ...

# Tools we use at TrustYou

- **NumPy** – fast matrix/array computation
- **SciPy** – advanced scientific algorithms
- **Scikit-learn** – machine learning
- **Pandas** – data analysis
- **NLTK**, **SpaCy** – text analysis
- **Tornado**, **asyncio** – async web services
- **lxml** – XML / HTML parsing + processing
- ...

# Tools we use at TrustYou

- **NumPy**
- **SciPy**
- **Scikit-learn**
- **Pandas**
- **NLTK**, **SpaCy**
- **Tornado**, **asyncio**
- **lxml**
- ...

Python Data ecosystem:

- NumPy integrates Data
- Cython integrates Code

# Why Cython?

- Fastest way to integrate native code
- Production proven
- Widely used
- All about «getting things done»

  – Pragmatic programming language

  – Keeps focus on functionality, not boilerplate

  – Allows moving freely between Python and C/C++

  – As pythonic as you want, as native as you need

- "We write C so you don't have to"

**Demo**

# Ideas for future features

- Comprehensions into C++ containers
  - `vector(i*2 for i in range(8))`
- Inline generators into loops
  - also in OpenMP parallel code
- `@total_ordering` decorator for extension types (C-implemented classes)
  - less code for fast object comparisons
- More sophisticated type inference

# Thanks!

## Any questions?

You can reach me at:
stefan.behnel@trustyou.com

Oh, and visit `www.trustyou.com`
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- we're hiring :)