



**INTEL<sup>®</sup>  
INNOVATION  
DAY**

# ИСПОЛЬЗОВАНИЕ ИНСТРУМЕНТОВ INTEL В ЦИКЛЕ РАЗРАБОТКИ ПРОГРАММНОГО ОБЕСПЕЧЕНИЯ

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# Разработка ПО

**Разработ́ка програ́ммного обеспéчения** (англ. *software development*) — деятельность по созданию нового программного обеспечения<sup>[1]</sup>.

Разработка программного обеспечения как инженерная дисциплина является составной частью (областью) программной инженерии, наряду с дисциплинами, отвечающими за функционирование и сопровождение программных продуктов<sup>[2]</sup>.

[https://ru.wikipedia.org/wiki/Разработка программного обеспечения](https://ru.wikipedia.org/wiki/Разработка_программного_обеспечения)

# CI: Автоматизированная сборка

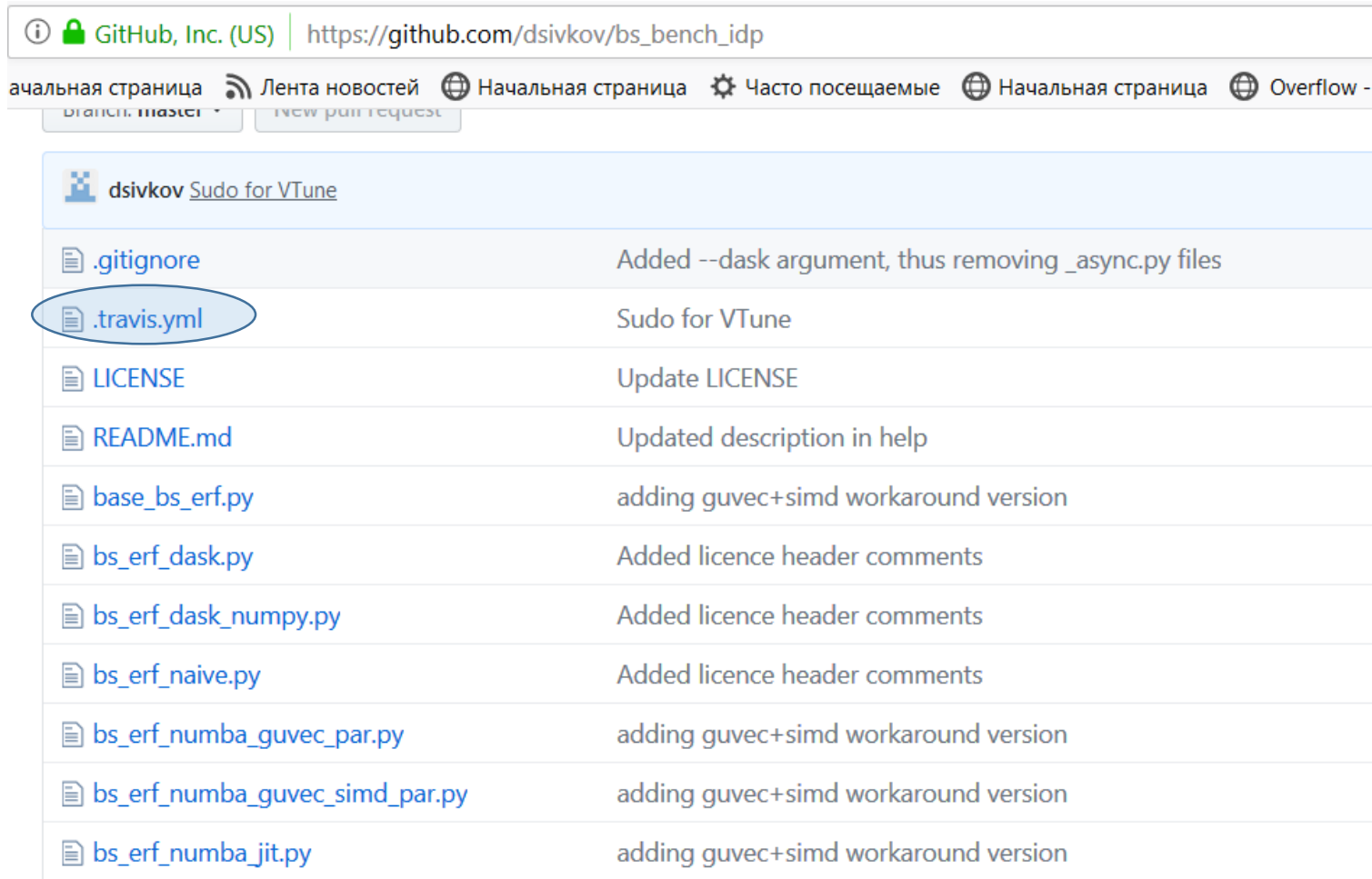
Меньше шагов – меньше вероятность ошибки

Подразумевает явное описание необходимого окружения и зависимостей

Примеры: `make`, `ant`, ...

10 минут (включая запуск тестов)

# Инструменты Intel в Travis-CI



The screenshot shows a GitHub repository page for 'dsivkov Sudo for VTune'. The browser address bar displays 'https://github.com/dsivkov/bs\_bench\_idp'. The repository name and owner are 'dsivkov Sudo for VTune'. Below the repository name, there is a list of files and their commit messages. The file '.travis.yml' is circled in blue.

File	Commit Message
<a href="#">.gitignore</a>	Added --dask argument, thus removing _async.py files
<a href="#">.travis.yml</a>	Sudo for VTune
<a href="#">LICENSE</a>	Update LICENSE
<a href="#">README.md</a>	Updated description in help
<a href="#">base_bs_erf.py</a>	adding guvec+simd workaround version
<a href="#">bs_erf_dask.py</a>	Added licence header comments
<a href="#">bs_erf_dask_numpy.py</a>	Added licence header comments
<a href="#">bs_erf_naive.py</a>	Added licence header comments
<a href="#">bs_erf_numba_guvec_par.py</a>	adding guvec+simd workaround version
<a href="#">bs_erf_numba_guvec_simd_par.py</a>	adding guvec+simd workaround version
<a href="#">bs_erf_numba_jit.py</a>	adding guvec+simd workaround version

# Инструменты Intel в Travis-CI

## Библиотеки и компиляторы

Language: python

python:

- "3.6"
- `wget https://repo.continuum.io/miniconda/Miniconda3-latest-Linux-x86_64.sh -O miniconda.sh;`
- `bash miniconda.sh -b -p $HOME/miniconda`
- `export PATH="$HOME/miniconda/bin:$PATH"`
- `conda create -y -n intel3 -c intel python=3 numpy numexpr scipy tbb dask numba cython`

# Инструменты Intel в Travis-CI

## Инструменты анализа – Intel® VTune™

```
- wget http://registrationcenter-  
download.intel.com/akdlm/irc_nas/tec/13079/vtune_amplifier  
_2018_update3.tar.gz  
- tar -xzf ./vtune_amplifier_2018_update3.tar.gz  
- sudo ./vtune_amplifier_2018_update3/install.sh -s  
./vtune2018u3.cfg  
- sudo sh -c 'echo 0  
>/proc/sys/kernel/yama/ptrace_scope'  
- source /opt/intel/vtune_amplifier/amplxe-vars.sh
```

# Инструменты Intel в Travis-CI

## Инструменты анализа – Intel® VTune™

script:

- source activate intel3
- python bs\_erf\_numpy.py --steps 4
- ampxe-cl -collect hotspots -strategy  
ldconfig.real:notrace:trace,ldconfig:notrace:trace -  
result-dir result -- python bs\_erf\_naive.py --steps 4
- ampxe-cl -R hotspots -result-dir result



# Инструменты Intel в Travis-CI

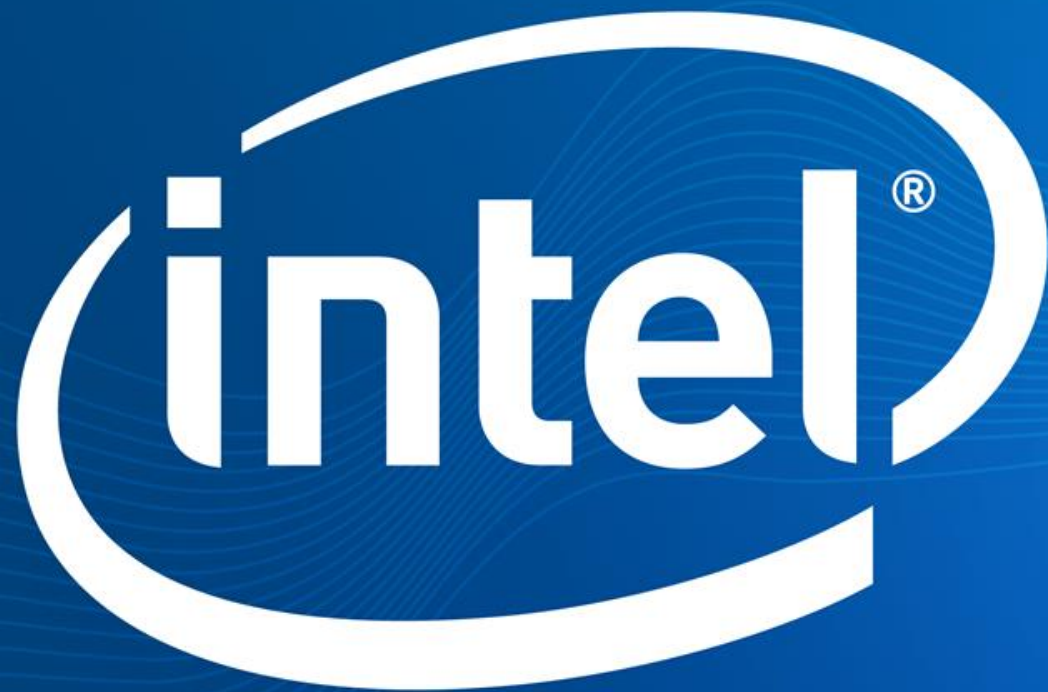
## Инструменты анализа – Intel® VTune™

COMPOSER EDITION	PROFESSIONAL EDITION	CLUSTER EDITION
<b>BUILD</b> Compilers & Libraries	<b>ANALYZE</b> Analysis Tools	<b>SCALE</b> Cluster Tools
<p>C / C++, Fortran Compilers</p> <p>Intel® Math Kernel Library</p> <p>Intel® Data Analytics Acceleration Library</p> <p>Intel Threading Building Blocks C++ Threading</p> <p>Intel® Integrated Performance Primitives Image, Signal &amp; Data Processing</p> <p>Intel® Distribution for Python* High Performance Python</p>	<p>Intel® VTune™ Amplifier Performance Profiler</p> <p>Intel® Inspector Memory &amp; Thread Debugger</p> <p>Intel® Advisor Vectorization Optimization Thread Prototyping &amp; Flow Graph Analysis</p>	<p>Intel® MPI Library Message Passing Interface Library</p> <p>Intel® Trace Analyzer &amp; Collector MPI Tuning &amp; Analysis</p> <p>Intel® Cluster Checker Cluster Diagnostic Expert System</p>

# DISCLOSURES

Intel Technology and Manufacturing Day 2017 occurs during Intel's "Quiet Period," before Intel announces its 2017 first quarter financial and operating results. Therefore, presenters will not be addressing first quarter information during this year's program.

Statements in this presentation that refer to forecasts, future plans and expectations are forward-looking statements that involve a number of risks and uncertainties. Words such as "anticipates," "expects," "intends," "goals," "plans," "believes," "seeks," "estimates," "continues," "may," "will," "would," "should," "could," and variations of such words and similar expressions are intended to identify such forward-looking statements. Statements that refer to or are based on projections, uncertain events or assumptions also identify forward-looking statements. Such statements are based on management's expectations as of March 28, 2017, and involve many risks and uncertainties that could cause actual results to differ materially from those expressed or implied in these forward-looking statements. Important factors that could cause actual results to differ materially from the company's expectations are set forth in Intel's earnings release dated January 26, 2017, which is included as an exhibit to Intel's Form 8-K furnished to the SEC on such date. Additional information regarding these and other factors that could affect Intel's results is included in Intel's SEC filings, including the company's most recent reports on Forms 10-K, 10-Q and 8-K reports may be obtained by visiting our Investor Relations website at [www.intc.com](http://www.intc.com) or the SEC's website at [www.sec.gov](http://www.sec.gov).



The image features a dark blue background with abstract, flowing wave patterns in yellow and orange. A bright lens flare is positioned on the right side, partially overlapping the text. The text is centered and reads "INTEL® INNOVATION DAY" in a large, bold, white sans-serif font, with "В РИТМЕ ТЕХНОЛОГИИ" in a smaller, bold, white sans-serif font below it.

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