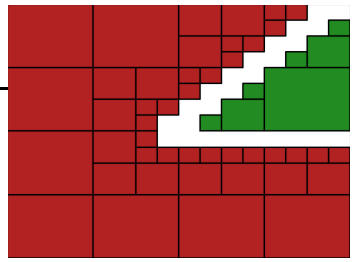
PaSyPy



A python-based tool using parameter synthesis to find safe and unsafe regions of the parameter space on nonlinear real arithmetic.

Table of contents

1. Installation

To install this tool, clone the directory and install all dependencies:

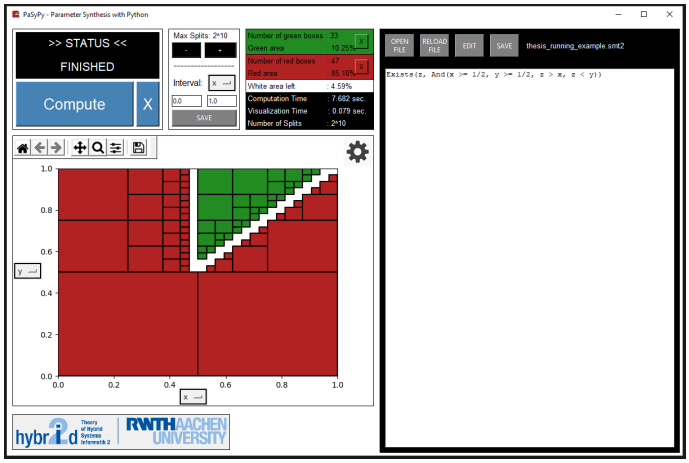
- `z3-solver`
- `matplotlib`
- `scikit-learn`
- `numpy`

All dependencies are also included in `requirements.txt` and can be installed by `pip install -r requirements.txt`.

2. Functionality / Usage

To start this tool, simply execute `__main__.py`.

Functionality:



- **SMT-LIB Support:** Read *.smt2* files or define your own formula in the text field.
- **Find safe and unsafe regions:** Separate the whole region of the parameter space into *safe (green)* and *unsafe (red)* regions. Select from different *splitting heuristics* to obtain optimal results.
- **Visualization:** Get a visualization for found safe (green) and unsafe (red) regions. Choose which parameters you want to see.
- **Information:** Lots of different information about your computation.
- **Settings:** Several settings available.

3. Suggestions / Bug reports

If you encounter any problems while using this tool or have any suggestions or feedback,
feel free to contact me.
Read the Known challenges section in the documentation first for a listing of all problems and suggestions.