

Synthesis for Rational Linear Arithmetic

This is the title of my bachelor thesis, done at EPFL¹ in the Laboratory for Automated Reasoning and Analysis². It was supervised by Viktor Kuncak³.

The idea was to write a program that takes as input some specifications, like “choose x such that $x < a$, and $x \leq b$ ”, for arbitrary parameters a and b . The program would then output code that given a and b returns x satisfying the specifications. For the example above, this would be of the form (in pseudocode):

```
def f(a,b):  
    return min (a,b) - 1
```

If you are interested, read the final report⁴, or have a look at the program’s source code⁵ (as always, you should verify its PGP signature⁶).

¹<http://www.epfl.ch/index.en.html>

²<http://lara.epfl.ch/web2010/>

³<http://lara.epfl.ch/~kuncak/>

⁴<http://svasey.org/projects/synthesis-rla/rla-report.pdf>

⁵<http://svasey.org/download.svasey.org/synthesis-rationals/synthesis-rationals.tar.gz>

⁶<http://svasey.org/download.svasey.org/synthesis-rationals/synthesis-rationals.tar.gz.sig>