

Synthesizing Benchmarks for Predictive Modeling



Chris Cummins
c.cummins@ed.ac.uk



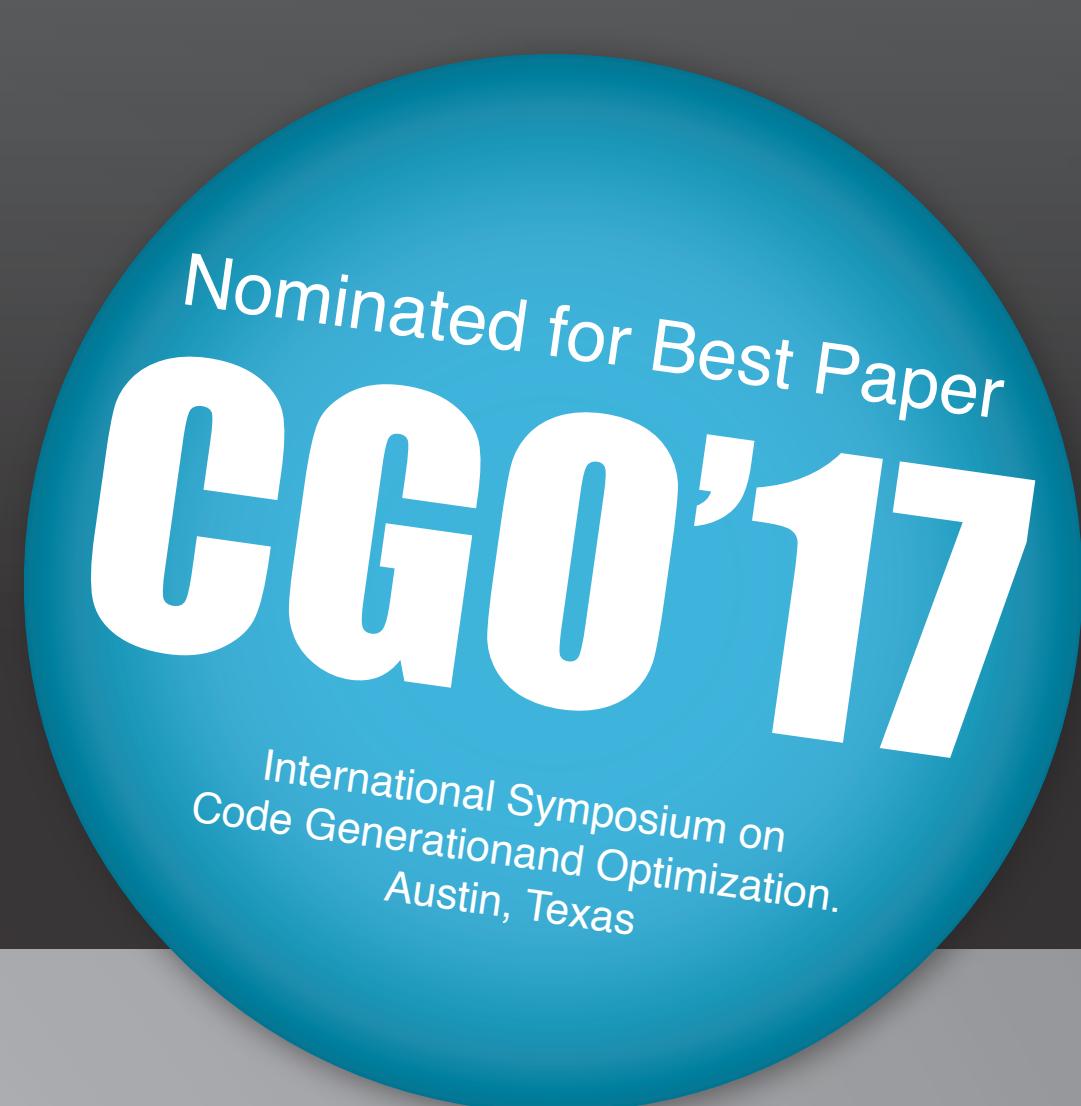
Pavlos Petoumenos



Zheng Wang

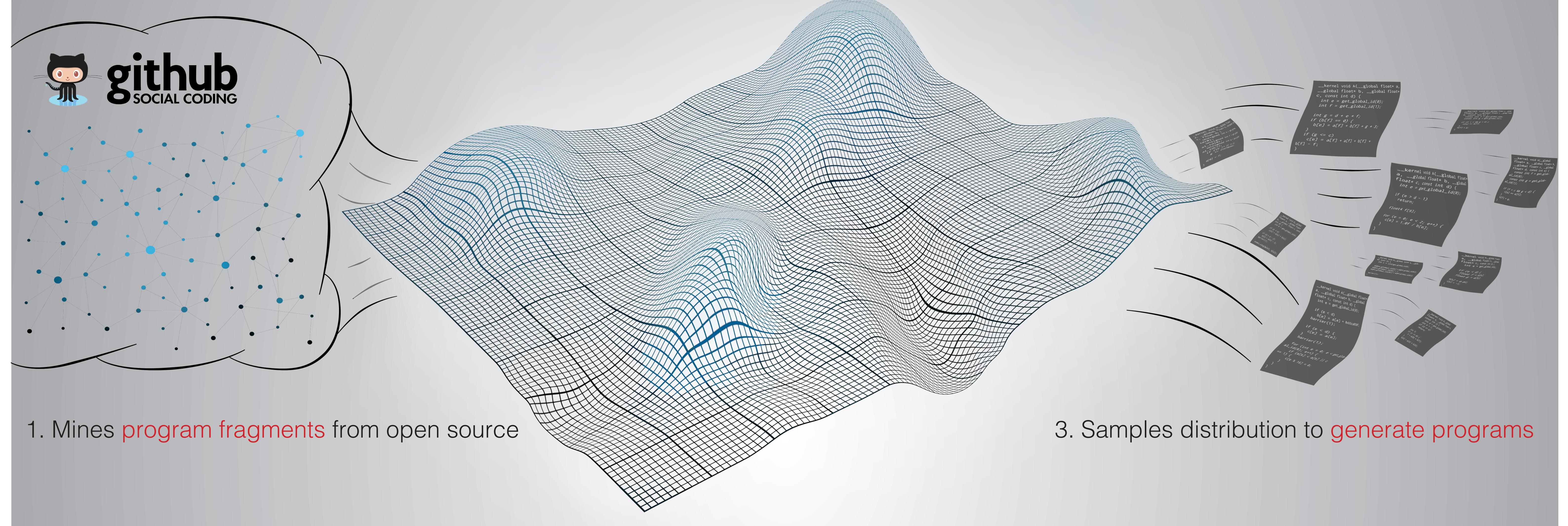


Hugh Leather

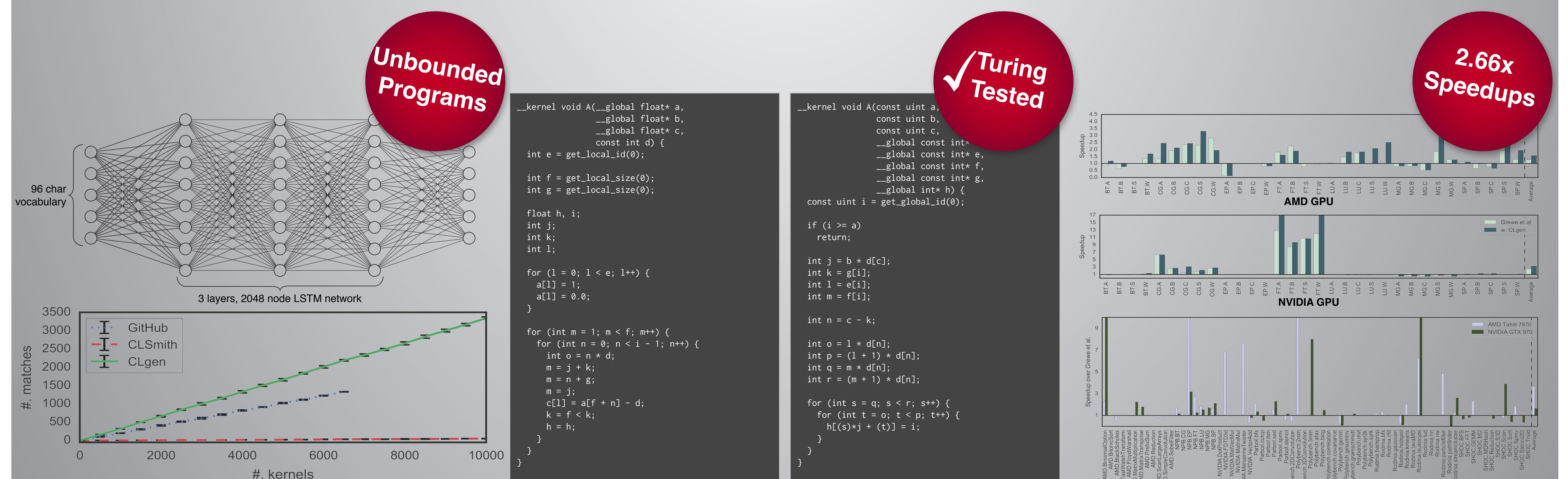


CLgen

Deep Learning Program Generator.



<http://chriscummins.cc/clgen>



Program Space Enumeration

- Generates syntactically correct, runnable programs.
- Closer in feature space than state of the art in program generation.
- 2,000+ programs per machine per day.

Human-like Code

- Indistinguishable from hand-written code.
- 52% average in double blind test “human or robot?”
- Can you tell the difference? Try for yourself at:

<http://humanorrobot.uk>

Improved Machine Learning

- 1000s+ benchmarks for training autotuners.
- Automatic 1.27x speedup from extra benchmarks.
- Further 2.66x speedup enabled by improvements to models discovered by additional benchmarks .