What is a CAIA lightning talk?

- 5 to 10 min
- Topic of interest
- Could be...
  - Future work (asking about interest, or a RFC)
  - A bit half-baked or work in progress
  - More development than research
  - What not to do
- ...but not limited to these.
Save your power, but change your time-stamp accuracy

Warren Harrop

So one day, there I was...

- Creating a thesis appendix
- Quantifying the frame time-stamping accuracy of PCs
- Using Mac Laptop + SmartBits
First graph...

- 100 pps
- \( \approx \pm 30\mu S \)

Second graph...

- 1000 pps
- \( \approx \pm 5\mu S \)
Hmmm...

- Hypothesis:
  - The less busy the computer, the more it's 'sleeping' (to save power) and the less accurate the time-stamping?

A “Busy” Mac

- Back to 100 pps – but this time we 100% the CPU with a script (`md5 -t` in an infinite loop * 2, for 2 cores)

- $\approx \pm 5\mu S$
FreeBSD – Dell Optiplex 260

Conclusion

- It seem that - the more your computer sleeps to save power, the less accurate your packet time stamping is
- Keep the changes in accuracy in perspective though
- If a concern, under FreeBSD don't use `powerd`
- But...

  - Testing was not extensive
  - I can't tell you what you'll see in your experiment
  - Just be aware of this issue - could get better or worse as time goes on
  - Future work?
Scilab, Inkscape and the SVG format are your friends

Warren Harrop

Figures in documents

- Two types:
  - Diagram
  - Graph
    - I like this to be as automated as possible

- OpenOffice?
  - Love it for many things, but has its limitations
  - Automation?

- Here are my suggestions... (three things)
Scilab

- “Open source Matlab”
- On Win, Mac, UNIX...
- Math/data oriented scripting language
- plot() - for graphs
- Fast
- Supports a variety of graphic formats
  - PNG, GIF, JPEG, EPS, PDF
- Can also output SVG format...

SVG

- Scalable Vector Graphics
  - Open XML based 2D vector graphics standard
  - Also interactive
- Wide support (eg. Firefox)
  - So, automatically generating many graphs?
    - Also generate some html and just click 'reload' to update output
- Better than EPS/PDF for figure manipulation
Inkscape

- Open source SVG editor
- SVG native file format
- Can also open and edit PDF/EPS
  - But it’s not pretty...
  - Limitation of many PDF and EPS
- Lets you modify your graphs easily
  - Fix a type-o, change a colour, add text, add an arrow... etc.
- Very quick demo

http://inkscape.org/

My workflow

- Latex
- Scilab for graphs
  - Output to SVG into `figures` folder
- Make-file converts SVG to PDF automatically, then builds the document
  - Optional: SVG to low res PDF – for faster final PDF viewing