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# pawgo: an interactive analysis workstation

**pawgo: an interactive analysis workstation**

Current interactive analysis toolkits usually leverage a Turing-complete general programming language, such as C++ or python, married with some kind of interpreter (*e.g.:* CINT or CLing) and a graphical user interface to present results (ROOT, matplotlib or Chaco.)
An obvious advantage of using a general programming language is that one can tap the full power of that language to build any analysis.
But conversely, users have to comply with the sometimes verbose ways of that language to describe "graphics" entities or express manipulations to be applied to these entities, letting much to be improved on the interactivity and reactivity fronts.

pawgo is a prototype re-investigating the use of a Domain Specific Language (DSL) - whith a nod to the old PAW and PAW++ applications.

This paper will first introduce the overall architecture of pawgo, a set of reusable Go libraries packaged as a portable application, and the tools it leverages (d3.js, WebSockets and RPC to name a few) to enable both remote and local work as well as batch execution mode.
Most importantly, the paper will describe the use of the grammar of graphics to overcome the impedance mismatch between general programming languages and graphics manipulations, thus easily allowing users to create new graphic objects, animations or styles.
Indeed, the grammar of graphics lets users and developers focus on the "what" to display, letting the underlying library deal with the minute details and ceremony of the "how" best to display.

Finally, the paper will present prospects and work ahead for pawgo to graduate from a prototype to a full-fledged analysis workstation.

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