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## Adobe and CMU researchers unveil a brilliant new JavaScript library: ConstraintJS



Above: Carnegie Mellons Stephen Oney.  
*Image Credit: Stephen Oney*

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**Richard Byrne Reilly** (<http://venturebeat.com/author/rbrventurebeat/>)

## Dylan's Desk

Weekly column by  
Dylan Tweney



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Adobe's vaunted research (<http://www.adobe.com/technology.html>) group and the crew from Carnegie Mellon Universities' Human-Computer Interaction Institute (<http://www.hcii.cmu.edu/>) have been busy.

After working closely in the garage, as it were, together, the two teams have emerged and announced the creation of ConstraintJS, a new open-source [JavaScript library](#) that, according to CMU, makes it way more easier to create interactive Web applications.

The hugely successful JavaScript language was launched 20 years ago and is prominently used for enabling users to control Web browsers, make changes in displayed documents, and send messages.

The new library specifies relationships "between elements on interactive websites. The constraints, as it were, can perform such tasks as automatically adjusting page elements as users interactive with them, or displaying dynamic data from other sites," according to a statement (<http://www.hcii.cmu.edu/news/stories/carnegie-mellon-creates-programming-library-developing-interactive-web-pages-javascript>).

The ConstraintJS library is a big deal. The research teams said ConstraintJS updates and manages how constraints can cause a component to automatically adjust the status of a Web page and helps developers "specify and track the various ways that a page's status might alter. For instance, how a button might act or change color when pressed."

Programmers working within ConstraintJS now have the ability to write templated code that has a nearly identical syntax and learning curve as HTML, but whose new features can increase versatility in Web pages.

"JavaScript drives the modern Web," CMU professor Brad A. Myers, who worked on the project, said in a canned statement. "Still, making interactive apps easier to [program](#) is a longstanding and fundamental problem. It's difficult to create interactive Web pages, because Web programming normally requires learning at least three languages: HTML, JavaScript and CSS."

CMU Ph.D. student Stephan Oney, 28, was one of the team leaders on the development. He said some of the technical difficulties writing in JavaScript libraries are now made easier. He said some JavaScript libraries provide reusable widgets, but those might not always dovetail with the specific demands of those writing code.

Rather than "providing pre-built widgets," Oney said, the collaborators "re-examined some of the fundamental reasons that programming these widgets is so difficult. We provide a lightweight library that works with other libraries and with many different program structures."

Adobe and the National Science Foundation helped bankroll the project.

Oney said the teams worked for two years on the library. Now that it has documentation and references, and now that bugs have been crushed, it's ready for wide release. But work on it will continue.

"I can't say this is going to change the world, but its actually a good starting point for other projects," Oney told VentureBeat. "It's pretty effective. It makes user interfaces easier to create and provides an interactive editor for people who don't know JavaScript that well.

You can scope out ConstraintJS here (<http://cjs.from.so/>) and follow Oney and his work here (<http://from.so/>).

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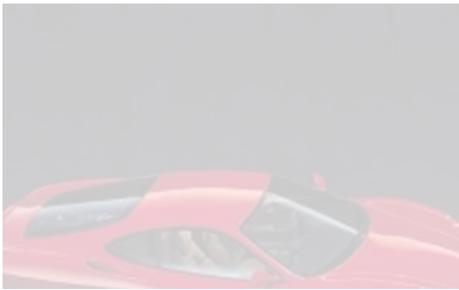
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