

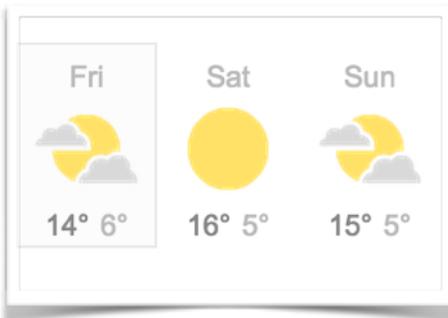
# ETAPS DAILY

Friday | the final edition |



## Few words by Joost-Pieter

ETAPS 2015 in London has been a great success. Excellent invited talks, inspiring tutorials, together with talks about the latest developments in the field of theory and practice of software made it more than worthwhile to attend ETAPS 2015. A big "THANK YOU!" on behalf of the entire ETAPS community is in order to the local organisation team, and in particular to Pasquale Malacaria and Nikos Tzevelekos. It is incredible to see that the Theory Group at Queen Mary have made this all happen. They have put high standards with wonderful social events such as a nice boat trip on the Thames and a great banquet at the Senate House. I am also curious to see whether the weather conditions can be met next year in Eindhoven, the Netherlands. I hope that all of you have enjoyed ETAPS 2015 as much as I did, and I hope to see you all back at ETAPS 2016



### Invited talk: Keshav Pingali

#### *A Graphical Model for Context-Free Grammar Parsing*

(Keshav Pingali and Gianfranco Bilardi)

**Abstract.** In the compiler literature, parsing algorithms for context-free grammars are presented using string rewriting systems or abstract machines such as pushdown automata. Unfortunately, the resulting descriptions can be baroque, and even a basic understanding of some parsing algorithms, such as Earley's algorithm for general context-free grammars, can be elusive. In this paper, we present a graphical representation of context-free grammars called the Grammar Flow Graph (GFG) that permits parsing problems to be phrased as path problems in graphs; intuitively, the GFG plays the same role for context-free grammars that nondeterministic finite-state automata play for regular grammars. We show that the GFG permits an elementary treatment of Earley's algorithm that is much easier to understand than previous descriptions of this algorithm. In addition, look-ahead computation can be expressed as a simple inter-procedural dataflow analysis problem, providing an unexpected link between front-end and back-end technologies in compilers. These results suggest that the GFG can be a new foundation for the study of context-free grammars

when we return to the Netherlands after 17 years.

Joost-Pieter Katoen

