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Communications of the ACM, 58(3), 2015

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*Second, would-be programmers (CS majors or non-majors) should be exposed as early as possible to functional programming languages to gain experience in the declarative programming paradigm. The value of functional/declarative language abstractions is clear: they allow programmers to do more with less and enable compilation to more efficient code across a wide range of runtime targets.*

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*First, computer science majors, many of whom will be the  
designers and implementers of next-generation systems,  
should get a grounding in logic, its application in design  
formalisms, and experience the creation and debugging of  
formal specifications with automated tools... .*

## Anwendung funktionaler Sprachen

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### Facebook:

- ▶ Sigma: automatische regelbasierte Erkennung von Spam u.ä.
- ▶ wurde in Haskell neu implementiert
- ▶ verarbeitet mehr als eine Million Anfragen pro Sekunde

[https://code.facebook.com/posts/745068642270222/  
fighting-spam-with-haskell/](https://code.facebook.com/posts/745068642270222/fighting-spam-with-haskell/)

## Anwendung logischer Sprachen

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### IBM:

- ▶ Watson: KI-Programm zur Beantwortung von Fragen in natürlicher Sprache
- ▶ Quizsendung Jeopardy (Feb. 2011): gewann gegen zwei menschliche Gegner
- ▶ Sprachverarbeitung mit Prolog

[https://de.wikipedia.org/wiki/Watson\\_%28K%C3%BCnstliche\\_Intelligenz%29](https://de.wikipedia.org/wiki/Watson_%28K%C3%BCnstliche_Intelligenz%29)

<http://www.cs.nmsu.edu/ALP/2011/03/>

[natural-language-processing-with-prolog-in-the-ibm-watson-system](#)