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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/>

WhatsApp: implementiert in Erlang

X/Twitter: verwendet funktionale Konzepte aus Scala

...

↪ Webseite zur Vorlesung

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

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

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

Anwendung logisch-funktionaler Sprachen

Anwendung logisch-funktionaler Sprachen

Moduldatenbank des Instituts:

<https://moduldb.informatik.uni-kiel.de/>

- ▶ einfachere APIs zur Web-Programmierung
- ▶ typsichere Datenbankprogrammierung

Epic Games (Fortnite,...):

- ▶ Programmiersprache Verse (Sweeney, Peyton Jones,... 2023)
- ▶ entwickelt als Programmierbasis der Spieleplattform
- ▶ Vortrag: <https://www.youtube.com/watch?v=0Jv8rFap0Nw>

Nutzung von funktionaler Programmierung

Neil Savage: *Using Functions for Easier Programming*

Communications of the ACM, 61(5), 2018, 29–30

<https://dl.acm.org/doi/10.1145/3193776>