

# TOMAS PETRICEK

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## Programming languages



Theory of context-aware programming languages

Extensions for concurrent & reactive programming

## F# and open source



F# tooling including editors & documentation tools

F# libraries for data access and data visualization

## Data science & journalism



Tools for transparent data-driven storytelling

Making notebooks smart, reproducible & polyglot

# PROGRAMMING RESEARCH meets DATA SCIENCE

Can research engineering become a regular part of data science research?

## Interactive programming for data science

```
let data =  
  olympics  
  . 'filter data'. 'Games is'. 'Rio (2016)'. then  
  . 'group data'. 'by Athlete'. 'sum Gold'. then  
  . 'sort data'. 'by Gold descending'. then
```

olympics	filter by ✕	group by ✕	sort by ✕	+
< ● >	by Gold descending ✕			+
Athlete		Gold		
Michael Phelps		5		
Katie Ledecky		4		
Simone Biles		4		
Katinka Hosszu		3		
Usain Bolt		3		
Jason Kenny		3		

## Data visualizations for critical thinking

