Data Driven UIs, Incrementally

Yaron Minsky

Abstract:
Trading in financial markets is a data-driven affair, and as such, it requires applications that can efficiently filter, transform and present data to users in real time. But there's a difficult problem at the heart of building such applications: finding a way of expressing the necessary transformations of the data in a way that is simultaneously easy to understand and efficient to execute over large streams of data.

This talk will show how we've approached this problem using /Incremental/, an OCaml library for constructing dynamic computations that update efficiently in response to changing data. We'll show how Incremental can be used throughout the application, from the servers providing the data to be visualized, to the JavaScript code that generates DOM nodes in the browser. We'll also discuss how these applications have driven us to develop ways of using efficiently diffable data structures to bridge the worlds of functional and incremental computing.

Bio:
Yaron Minsky obtained his BA in mathematics from Princeton University and his PhD in Computer Science from Cornell University, focusing on distributed systems. In 2003, he joined Jane Street where he has worked in a number of areas, founding the quantitative research group and helping transition the firm to using OCaml, a statically typed functional programming language, as its primary development platform.