

1. Record Nr.	UNINA9910831072703321
Autore	Harrop Jon
Titolo	F# for scientists // Jon Harrop ; foreword by Don Syme
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , 2008 ©2008
ISBN	1-118-21081-6 1-281-76688-7 9786611766887 0-470-38595-2 0-470-38594-4
Edizione	[1st edition]
Descrizione fisica	1 online resource (370 p.)
Disciplina	005.1/14 005.114 005.133
Soggetti	F# (Computer program language) Science - Data processing Functional programming (Computer science)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction. Programming guidelines -- A brief history of F# -- Benefits of F# -- Introducing F# -- Imperative programming -- Functional programming -- Program structure. Nesting -- Factoring -- Modules. Objects -- Functional design patterns -- F# development -- Data structures. Algorithmic complexity -- Arrays -- Lists -- Sets -- Hash tables -- Maps -- Choosing a data structure -- Sequences -- Heterogeneous containers -- Trees -- Numerical Analysis. Number -- Algebra -- Interpolation -- Quadratic solutions -- Mean and variance -- Other forms of arithmetic -- Input and Output. Printing -- Generic printing -- Reading from and writing to files -- Serialization -- Lexing and parsing -- Simple Examples. Functional -- Numerical -- String related -- List related -- Array related -- Higher order functions -- Visualization. Windows forms -- Managed DirectX -- Tessellating objects into triangles -- Optimization. Timing -- Profiling --

Algorithmic optimizations -- Lower level optimizations -- Libraries.
Loading .NET libraries -- Charting and graphing -- Threads -- Random numbers -- Regular expressions -- Vectors and matrices --
Downloading from the Web -- Compression -- Handling XML --
Calling native libraries -- Fourier transform -- Metaprogramming --
Databases. Protein data bank -- Web services -- Relational databases --
Interoperability. Excel interoperability -- MATLAB interoperability --
Mathematica interoperability -- Complete examples. Fast Fourier transform -- Semicircle law -- Finding nth nearest neighbors --
Logistic map -- Real time particle dynamics -- Appendix A: Troubleshooting.

Sommario/riassunto

"This work strikes a balance between the pure functional aspects of F# and the object-oriented and imperative features that make it so useful in practice, enable .NET integration, and make large-scale data processing possible."-Thore Graepel, PhD, Researcher, Microsoft Research Ltd. Over the next five years, F# is expected to become one of the world's most popular functional programming languages for scientists of all disciplines working on the Windows platform. F# is free and, unlike MATLAB® and other software with numerical/scientific origins, is a full-fledged programming language.<
