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Practical Computing for Biologists

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Have you ever wanted to:

- Re-label certain values in your data?
- Rename a series of your data files intelligently?
- Extract organized data from a series of web pages?
- Import a non-standard data format into MATLAB or R?
- Do the same calculations on values in each file named .dat in a folder?
- Create automated tools for sorting through data or molecular sequences?
- Prepare a figure to appear in the journal exactly as you envisioned it?

ABOUT THE BOOK

Increasingly, scientists find themselves facing exponentially larger data sets and analyses without suitable tools to deal with them. Many biologists end up using spreadsheet programs for most of their data-processing tasks and spend hours clicking around or copying and pasting, and then repeating the process for other data files.

Practical Computing for Biologists shows you how to use many freely available computing tools to work more powerfully and effectively. The book was born out of the authors' own experience in developing tools for their research and helping other biologists with their computational problems. Although many of the techniques are relevant to molecular bioinformatics, the motivation for the book is much broader, focusing on topics and techniques that are applicable to a range of scientific endeavors. Twenty-two chapters organized into six parts address these topics and more:

- Searching with regular expressions
- The Unix command line
- Python programming and debugging
- Creating and editing graphics
- Databases
- Performing analyses on remote servers
- Working with electronics

THE COMPANION WEBSITE: practicalcomputing.org

Here you can download example files and other scripts, consult with other scientists, and give feedback on the book.

THE PUBLISHER'S WEBSITE:

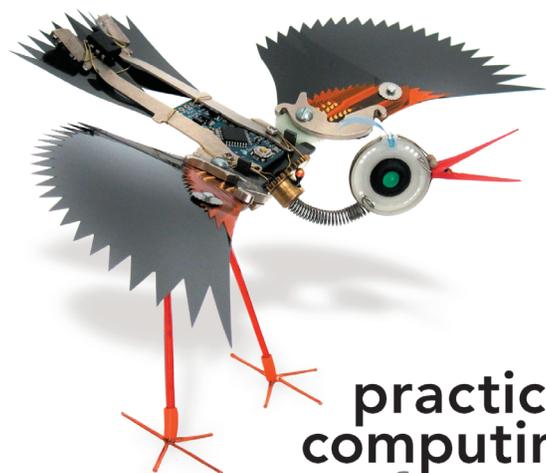
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practical computing for biologists

HADDOCK • DUNN

About the cover: Ann P. Smith created the "Robobird" sculpture used on the cover of the book (and at the website). Explore Ann's other fantastical artwork at burrowburrow.com.

PRE-PUBLICATION COMMENTS

"This book has already made me more confident in confronting the large amounts of data that face me in day-to-day research."

—Ronald Jenner, The Natural History Museum, London, UK

"Honestly, I've made more progress on my dissertation in the last week than in the last six months. I've been feeling very lucky to have read this book."

—Katie Mach, graduate student

"Incredibly useful book. I couldn't get through it fast enough. I was literally using what I learned the day after I read it."

—Dan Barshis, postdoc

"There's a better way to do what you're doing, and this book empowers you to do so. It is essential to any biologist, but also to any scientist or computer user wanting to do their work more efficiently."

—Julie Stewart, graduate student

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