Python Algorithms

Mastering Basic Algorithms in the Python Language

Magnus Lie Hetland

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For my students.
May your quest for knowledge be richly rewarded.

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About the Author

Magnus Lie Hetland is an experienced Python programmer, having used the language since the late 90s. He is also an associate professor of algorithms at the Norwegian University of Science and Technology and has taught algorithms for the better part of a decade. Hetland is the author of *Beginning Python* (originally *Practical Python*).

About the Technical Reviewer

Alex Martelli was born and grew up in Italy and holds a Laurea in Ingeneria Elettronica from the Universitá di Bologna. He wrote *Python in a Nutshell* and coedited the *Python Cookbook*. He's a member of the PSF and won the 2002 Activators' Choice Award and the 2006 Frank Willison Award for contributions to the Python community. He currently lives in California and works as senior staff engineer for Google. His detailed profile is at `www.google.com/profiles/aleaxit`; a summary bio is at `http://en.wikipedia.org/wiki/Alex_Martelli`.

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Preface

This book is a marriage of three of my passions: algorithms, Python programming, and explaining things. To me, all three of these are about aesthetics—finding just the right way of doing something, looking until you uncover a hint of elegance, and then polishing that until it shines. Or at least until it is a bit shinier. Of course, when there's a lot of material to cover, you may not get to polish things quite as much as you want. Luckily, though, most of the contents in this book is prepolished, because I'm writing about really beautiful algorithms and proofs, as well as one of the cutest programming languages out there. As for the third part, I've tried hard to find explanations that will make things seem as obvious as possible. Even so, I'm sure I have failed in many ways, and if you have suggestions for improving the book, I'd be happy to hear from you. Who knows, maybe some of your ideas could make it into a future edition? For now, though, I hope you have fun with what's here and that you take any newfound insight and run with it. If you can, use it to make the world a more awesome place, in whatever way seems right.