# GenAI Companion for The Data Scientist

GenAI Tools and Techniques for Data Science

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# Preface

This companion volume sits beside the core *The Data Scientist* path. It is intentionally parallel: the core books remain the primary source of technical content and progression, while this companion shows how to use modern GenAI tooling in disciplined browser and terminal workflows at each module.

The aim is practical acceleration with quality control. Delegates should become faster at planning, drafting, debugging, and reviewing without outsourcing judgment. Every generated output must still be tested, validated, interpreted, and documented.

**Positioning**

This is a companion track, not a replacement track. Fundamentals, statistics, and reproducible engineering habits from the core path stay non-negotiable.

Tooling choice needs one explicit note. This book focuses on OpenAI tooling (ChatGPT in the browser and Codex in the CLI) because that reflects the author's own preference and production experience. There are credible alternatives, including Claude + Claude Code and Gemini + Gemini CLI. They are comparable to a meaningful extent, but each has relative strengths and weaknesses depending on task type, context window behavior, tool integration, and coding workflow style.

Delegates should compare options directly before committing to a daily setup, with special attention to pricing under expected workload. A light usage profile and a heavy code-assistance profile can have very different cost behavior.

**Cost and Tooling Reality**

Do not choose a stack by brand alone. Compare capability, reliability in your actual tasks, and monthly cost under realistic usage volume.

This companion is organized in the same sequence as the program:

- primer setup and operating model,
- Module 1 companion (Python foundations),
- Module 2 companion (data work and storytelling),
- Module 3 companion (statistics and machine learning),
- Module 4 companion (reproducible projects and delivery).

The practical loop remains constant across all chapters:

1. define the task clearly,
2. generate a first draft,

3. verify with checks and tests,
4. revise and document decisions,
5. keep artifacts reproducible.

That loop is where GenAI becomes useful rather than noisy. The goal is not to produce more text or more code. The goal is to produce clearer, safer, and more explainable work.

**Companion Asset Sync**

Chapter examples point to files in `code/`, `notebooks/`, and `artifacts/`. Some are fully populated starter assets, while others are intentionally lightweight placeholders for delegate work.
If you are unsure whether a referenced file is already provided, check `artifacts/asset_manifest.md` first. Treat that file as the single source of truth for current availability and next planned additions.

# Contents

# List of Figures

# Bibliography


[1] Hilpisch, Yves J. (2026): *Python Primer for Data Science. The Data Scientist.*

[2] Hilpisch, Yves J. (2026): *Python Programming Foundations for Data Science. The Data Scientist.*

[3] Hilpisch, Yves J. (2026): *Python Data Analysis, Visualization, and Storytelling. The Data Scientist.*

[4] Hilpisch, Yves J. (2026): *Statistics, Machine Learning, and Model Evaluation. The Data Scientist.*

[5] Hilpisch, Yves J. (2026): *Software Engineering, Reproducibility, and Deployment Basics. The Data Scientist.*

[6] OpenAI (2026): *CLI – Codex Documentation.* developers.openai.com.

[7] OpenAI (2026): *openai/codex README.* github.com.

[8] OpenAI (2026): *openai/codex installation guide.* github.com.

[9] OpenAI (2026): *OpenAI API Authentication and API Keys.* platform.openai.com.

[10] OpenAI Help Center (2026): *Where do I find my OpenAI API Key?.* help.openai.com.

[11] OpenAI (2026): *ChatGPT Pricing.* openai.com.

# Contact

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