

# The Compiler's Apprentice

## On the Craft of Building Languages

**Anna Linde**

*A Kelford Press Original*

---

First published in 2026 by Kelford Press

Copyright © 2026 Kelford Press. All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means — electronic, mechanical, photocopying, recording, or otherwise — without the prior written permission of the publisher, except for brief quotations in reviews or academic work.

ISBN 978-1-7398-2230-5 (Digital) ISBN 978-1-7398-2231-2 (Print) ISBN 978-1-7398-2232-9 (Audio)

**kelfordpress.com**

---

*For every engineer who has ever read the dragon book and wondered why none of it felt like permission.*

---

## Contents

1. Why Build a Language
2. The Tokeniser Is the First Honest Step
3. Parsers as Conversations
4. Types Are Promises
5. The IR Is Where the Compiler Thinks
6. Optimisation Without Tears
7. Errors Are User Interface
8. The Tooling Around the Language
9. Knowing When You Are Finished

Bibliography Notes About the Author

---

Most programmers will never write a compiler. A small number will write one and never tell anyone. A vanishingly small number will write one whose users it survives. The Compiler's Apprentice is for the people in the second and third groups — the engineers who have decided, for reasons they can or cannot fully justify, that an existing language is not enough. It does not promise that you should build your own language. It promises that, if you have already decided to, the path is not as mysterious as the literature suggests.