



Inclusive Design for Accessibility

A practical guide to digital accessibility, UX, and inclusive web and app design



Dale Cruse & Denis Boudreau et al.

Foreword by Glenda Sims

Chief Information Accessibility Officer (CIAO) at Deque

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To my parents, Paul and Geraldine, who taught me – loudly and without apology – that people with disabilities are just that: people. Your unwavering clarity became my compass. And to my wife, Heather Humble – my fiercest believer, my truest

partner. This entire book carries your fingerprints, whether visible or not. You're my favorite.

- Dale Cruse

To those living with invisible disabilities or neurodivergent minds. To those who feel they must hide their truth to stay safe, fit in, or be seen as "enough." To those who've mastered the art of masking, not because they want to, but because they have to. This book is for you. May the world soon be one where we no longer have to mask to belong.

- Denis Boudreau

Foreword

What happens when twelve of the most thoughtful, experienced minds in accessibility come together to write a book? You get something far more powerful than a technical manual – you get a blueprint for designing a digital world that truly works for everyone.

This book is a call to shift our thinking – from designing for disabilities to designing for human diversity. It challenges the idea that accessibility is a narrow specialty. Instead, it presents accessibility as the foundation for innovation, equity, and a better user experience for all.

One line that sticks with me:

“ When we encounter an inaccessible website, we now see a flawed design, not a ‘disabled’ user. ”

This shift in mindset is game-changing.

These authors – educators, practitioners, researchers, and advocates – invite us into a more expansive, human-centered way of working. They show how ability is fluid, not fixed. How intersectionality complicates assumptions. And how co-creation with disabled users isn’t just nice to have – it’s essential.

The concepts here are grounded in experience and creatively forward-looking. You’ll find solid frameworks such as the Seven Principles of Universal Design, alongside fresh, vibrant approaches such as “co-creation

carnivals” and deeply practical advice on how to solve complex accessibility puzzles.

You’ll be smarter when you finish this book. But more importantly, you’ll be better equipped to help build the kind of digital world we all deserve.

To the twelve brilliant authors: thank you for being my muses. I’ve had the privilege of working side by side with many of you – learning together, mentoring and being mentored, and most of all, sharing a fierce commitment to digital equality. You inspire me to stretch further. Especially you, Boudreau!

To you – yes, you – reading this: let this book guide you, challenge you, and energize your next step forward. Together, we are the changemakers.

To accessibility and beyond!

Glenda Sims (The good witch of a11y)

Chief Information Accessibility Officer (CIAO) at Deque

Contributors

About the authors

Dale Cruse is a highly sensitive empath driven by a lifelong commitment to equal opportunity, inspired by his parents with disabilities. He created accessibility programs at Twitch and McGraw-Hill Education and led inclusive design initiatives at Microsoft and Deque, where he also helped launch the industry-standard axe DevTools accessibility testing plugin. Dale shared his expertise in the book *Accessibility for Everyone*, and *The Web Ahead* podcast, and is the author of *HTML5 Multimedia Development Cookbook* for Packt Publishing.

Denis Boudreau is an international expert in digital accessibility and inclusive leadership with 25 years of experience in the field, working with leaders and executives who are no longer willing to overlook disability inclusion and want to transform their leadership approach from “inclusive-ish” to truly inclusive. He specializes in supporting organizations wishing to adopt more inclusive leadership and communication practices, particularly for their workforce and clients who live with disabilities, are aging, or are marginalized by technology. Offering thought leaders and communicators the means to extend the reach of their message to a much broader audience, he is also the author of the Amazon bestseller *The Inclusive Speaker*, published in 2023.

About the contributing authors

Dr Angela Young (they/them) is a bold advocate for digital accessibility. They drive change among queer, deaf, disabled, and neurodiverse professionals in tech through education, strategy, and storytelling. A seasoned speaker and 18-year educator, Angela has led accessibility initiatives at scale, empowering thousands to build inclusive digital experiences. They bring humor, heart, and deep expertise to every conversation. Angela holds a doctorate in education and certifications in accessibility and leadership.

Maya Sellon is an inclusive design and accessibility leader with over 20 years of experience across North America, Asia, and Europe. She's currently completing her postgraduate degree in assistive technology and human services at CSUN. Maya has developed and implemented accessibility practices for global organizations, embedding inclusivity at the heart of design and technology. With a career spanning civil engineering, user experience, and digital accessibility, she brings a diverse and well-rounded perspective. A tech enthusiast, Maya believes accessibility is about people – not just rules or technology. In her free time, she enjoys drumming and is training to become a certified solo skydiver.

Julianna Rowsell (she/her) is a chronically ill, neurodivergent, and disabled product leader with ADHD, ankylosing spondylitis, and anemia. They bring 20+ years of expertise in accessibility, disability justice, and equity, challenging extractive systems to co-create inclusive just futures. They hold a master's of design in inclusive design from OCAD University. Julianna has helped organizations such as the Government of Canada and leading tech companies make moves toward big bets that focus on accessible outcomes and equitable futures. In 2022, they founded, with their partner, an accessible, sustainable, regenerative flower farm.

Nandita Gupta is a senior product manager of accessibility at Cisco, where she works on creating accessible and user-friendly products for all. She was

named ADCOLOR in Tech 2024, and featured in NASDAQ, Forbes, Times of India, and other media outlets. As a TEDx speaker, she has spoken internationally at numerous conferences and works within the intersection of product and accessibility. She is a board member on different boards within the community including Lime Connect and the Accessibility Leadership Council for Disability: IN. She has been actively involved in various mentoring organizations over the past years and was inducted into the Susan M. Daniels Disability Mentoring Hall of Fame.

Jennifer Chadwick is an award-winning senior digital accessibility strategist and coach, who works in Canada, the UK, Europe, and the US. She teaches organizations to understand the needs of users with disabilities and develops action plans for product design, customer service, marketing, HR, and procurement. Jennifer has spoken at CSUN, AccessU, the University of Toronto, and the United Nations COSP. She co-chairs the W3C Accessibility Roles and Responsibilities Mapping (ARRM) community group and contributed to the standards WCAG Silver 3.0 and the Accessibility Conformance Testing Rules (ACT 1.0).

Crystal Scott is a Christian wife, mother of three extraordinary children, and a Certified Professional in Web Accessibility (CPWA). With a decade of frontend development experience and nearly six years specializing in accessibility, she has dedicated time to mastering Webflow and building accessible websites, with plans to launch Graceful Web Studio in 2025. She is also a design annotation ninja and the founder of the Accessibility Book Club, a thriving LinkedIn community. Crystal is pursuing a B.A. in graphic design and media arts at SNHU and is passionate about lifelong learning, technology, and user-centered design. She lives in Yakima, Washington, with her family and two blue nose pit bulls.

Chris McMeeking is an accessibility-focused engineer and the founder/CTO of MobA11y, where he leads teams in reimagining how AI can support

people with disabilities. With over a decade of experience, Chris has shaped mobile accessibility at companies such as CVS Health and Deque Systems, building tools that help developers create more inclusive apps. His early work on Switch Control – now a core feature on iOS and Android – originated from a University of Michigan project, where he later served as a longtime mentor. Chris brings deep technical insight and human-centered leadership to every product he touches.

Dr. Keith Newton is a senior technology specialist and leader in digital accessibility, AI, and user-centered design. An invited expert in W3C Accessibility Platform Architecture and Maturity working groups, Dr. Keith has led enterprise-wide transformations by integrating AI and machine learning to improve accessibility testing, organizational maturity, and governance. He's collaborated with brands such as eBay, Warner Bros. Discovery, Salesforce, and American Express, developing scalable UX/UI solutions, building training programs, and promoting inclusive design. His deep expertise in WCAG compliance, assistive tech testing, and digital transformation has established him as a sought-after authority whose innovative contributions continue to shape the future of accessible technology.

Charlie Triplett is a UX engineering accessibility coach, championing inclusive UX design and accessible UI engineering. With two decades of experience in SEO and conversion optimization, he learned early on that the best digital products are the ones everyone can use. Now, he helps enterprises go beyond compliance, intertwining accessibility with innovation to create perceivable, operable, understandable, and robust experiences that drive both usability and business success. Charlie also wrote *The Book on Accessibility*, an operational guide designed to help organizations of any size integrate inclusion into their processes. Charlie lives in New York where he enjoys hiking, canyoneering, and a good bagel.

Kai Wong (she/they) is a passionate change agent for digital accessibility in the tech industry. They are an inventor (U.S. patent pending), a 2021 DC FemTech Award recipient, and have trained over 2,500 professionals. Dubbed a presenter who “could make stale bread interesting,” Kai’s strategy is simple: make it fun, and inspire action. They hold a B.S. in community health from the University of Maryland and certifications in accessibility, health education, and quality assurance.

About the reviewers

Daryl Suttie is a web accessibility professional with 25+ years of experience in HTML, CSS, and JavaScript, 10+ years in UX/UI and product management, and 10+ years of frontend testing. He has been focused on leveraging this experience specifically to support accessibility for 4+ years. He has worked in this capacity for major national retailer Canadian Tire, international consulting firm Accenture, and currently, the people platform company Dayforce (formerly Ceridian). He believes that education and mentorship are critical in shifting attitudes and practices in web accessibility. More importantly, he believes that “the work is the teacher,” (i.e., the best learning is achieved through solving practical, relevant problems).

Ricky Osman is a principal technical writer for the Knowledge Center at TPG Interactive, a global digital accessibility company. In this capacity, he writes guidance for TPGi staff and clients conducting manual accessibility audits, as well as helping to craft the rules engine for TPGi’s automated testing tools, developing training courses, and writing blog posts. Working remotely from his East Coast Australian home, he tests everything in his personal device lab to ensure he’s not making things up. Ricky built his first website in 1994 when it was still assumed that accessibility was a given, and since then, has worked as a freelance web designer and frontend developer, and then as an accessibility specialist with organizations such as AccessIQ, Simply Accessible, AccessibilityOz, Intopia, Tenon, and now TPGi. Ricky has also spent his working life honing his writing skills, which has brought him work in senior editorial positions with the likes of UX Australia, SitePoint, Web Directions, and Smashing Magazine.

Preface

In an increasingly digital world, the ability to access information, services, and opportunities online is not a luxury – it’s a human right. Yet, for millions of people with disabilities, everyday digital experiences still present barriers that prevent full participation. Whether it’s a mobile app that can’t be navigated with a screen reader, a website that hides key content behind inaccessible modals, or an AI tool that misinterprets a user’s voice or intent, digital exclusion remains a persistent and solvable problem. *Inclusive Design for Accessibility* is a practical guide for anyone who wants to close that gap – designers, developers, content creators, QA testers, and organizational leaders alike.

This book brings together voices from across the accessibility community to provide you with a comprehensive roadmap for building inclusive digital experiences. It begins by grounding you in the principles of inclusive design and the diverse needs of real users. From there, it explores the nuts and bolts of implementation: how to design accessible user interfaces, write inclusive content, build accessible websites and mobile apps, and test with both automated tools and human insight. As technology evolves, so must our approach. That’s why we also examine accessibility in emerging spaces such as VR, AR, and AI – and look at the organizational strategies needed to scale these efforts sustainably.

Throughout the book, you will encounter real-world tools and technologies – from screen readers such as VoiceOver and NVDA to development frameworks such as SwiftUI, Compose, and React Native. But more importantly, you’ll gain a human-centered lens on accessibility: one that

views inclusion not as a checklist, but as a creative, ethical, and business-critical practice. Whether you're just starting out or looking to level up your organization's accessibility maturity, this book will help you design with empathy, build with intention, and create digital products that work for everyone.

Who this book is for

This book is perfect for digital designers, developers, UX professionals, product managers, and business leaders committed to inclusive design. It offers practical skills to create accessible digital products, as well as covering legal and ethical aspects, user research, and building an accessibility culture within teams.

You don't need to be an expert to get value from this book. Each chapter offers actionable insights that stand on their own – be it UX design, product management, development, or accessibility leadership.

What this book covers

In [Chapter 1](#), *Defining Inclusive Design in the Digital Age*, Dale Cruse charts the evolution of accessibility from a reactive add-on to a proactive, user-centered design mindset. The chapter introduces foundational concepts such as universal design principles, the social model of disability, and inclusive research methods, equipping you to design digital experiences that work for everyone.

In [Chapter 2](#), *Understanding Diverse User Needs: Types of Disabilities and Assistive Technologies*, Dr. Angela Young, CPACC, examines how people with a wide range of permanent, temporary, and situational disabilities interact with digital technology. The chapter provides an in-depth look at assistive technologies, categorizes different disability types, and maps user needs to inclusive design strategies, offering you practical guidance for creating digital products that are truly accessible and empowering for all.

In [Chapter 3](#), *Legal and Ethical Considerations in Accessible Design*, Maya Sellon explains how digital accessibility is both a legal requirement and an ethical imperative. The chapter outlines global laws such as the ADA and CRPD, explores the limitations of compliance-only approaches, and emphasizes the importance of designing inclusively from the start to foster meaningful and equitable user experiences.

In [Chapter 4](#), *User Research and Testing for Inclusive Products*, Julianna Rowsell guides you through building inclusive research practices that center on disabled, neurodivergent, and marginalized participants from the outset. The chapter offers strategies for equitable recruitment, accessible methodologies, and meaningful analysis, emphasizing that inclusive

research is a relational, ongoing practice – not a checklist – and must translate into design decisions that reflect the lived realities of diverse users.

In [Chapter 5](#), *Designing Accessible User Interfaces: Visual and Interaction Design*, Nandita Gupta explores how to build interfaces that are inclusive across visual, cognitive, and input-related dimensions. The chapter provides actionable guidance on using color responsibly, supporting cognitive accessibility, enabling multiple input methods, and scaling accessible design systems, empowering you to create digital experiences that are not only usable but equitable for all.

In [Chapter 6](#), *Creating Accessible Content: Writing, Images, and Multimedia*, Jennifer Chadwick empowers content creators to communicate inclusively by using plain language, accessible formatting, and alternative content formats. The chapter offers practical guidance for writing clear text, labeling interactive elements, describing images and multimedia, and concludes with a hands-on walk-through exercise to help creators evaluate and improve accessibility across content types.

In [Chapter 7](#), *Developing Accessible Websites: HTML, CSS, and ARIA Best Practices*, Crystal Scott equips developers with foundational skills to build inclusive, accessible websites. The chapter covers semantic HTML, accessible CSS styling, proper use of ARIA attributes, and testing strategies – encouraging an accessibility-first mindset that integrates inclusion into every coding decision.

In [Chapter 8](#), *Mobile Accessibility: Designing for Touch and Voice Interfaces*, Chris McMeeking explores the unique challenges and opportunities of building accessible mobile applications. The chapter offers practical guidance for optimizing touch targets, supporting diverse input methods, designing for voice interaction, and ensuring responsive layouts –

empowering teams to deliver inclusive mobile experiences across platforms and devices.

In [Chapter 9](#), *Accessibility in Emerging Technologies: VR, AR, and AI*, Dr. Keith Newton explores how to design inclusive experiences in immersive and intelligent systems. The chapter offers practical strategies for adapting virtual and augmented reality for users with diverse needs and highlights how AI can both enhance and complicate accessibility, depending on how it's implemented.

In [Chapter 10](#), *Foundations of Accessible Design System Patterns*, Charlie Triplett lays out a comprehensive framework for building accessibility into design systems from the ground up. The chapter emphasizes starting with common user needs – such as low vision, color perception, and cognitive accessibility – before layering in more complex assistive technology support, guiding teams to create inclusive, scalable systems that reduce barriers by default.

In [Chapter 11](#), *Tools and Techniques for Accessible Evaluation and Prioritization*, Kai Wong, CPACC, CHES®, guides you through the practical steps of accessibility testing for websites and mobile apps. The chapter covers how to combine automated tools with manual audits, prioritize and remediate issues, and embed accessibility into development workflows – helping teams build more inclusive digital products from the ground up.

In [Chapter 12](#), *Building an Inclusive Design Culture: Strategies for Organization*, Denis Boudreau, CPWA, shows how to embed accessibility into an organization's daily operations, culture, and mindset. The chapter outlines strategies for cultivating empathy, integrating accessibility into workflows, measuring progress, and sustaining continuous learning –

empowering teams to move from compliance to a meaningful, people-centered practice of inclusive design.