## Contents

WI	What's Inside?		xvii
t	WH	1	
	1.1	Introduction	1
	1.2	Good and Poor Design	2
	1.3	What Is Interaction Design?	9
	1.4	The User Experience	13
	1.5	Understanding Users	15
	1.6	Accessibility and Inclusiveness	17
	1.7	Usability and User Experience Goals	19
	Inte	rview with Harry Brignull	34
2	THE	PROCESS OF INTERACTION DESIGN	37
	2.1	Introduction	37
	2.2	What Is Involved in Interaction Design?	38
	2.3	Some Practical Issues	55
3	CON	69	
	3.1	Introduction	69
	3.2	Conceptualizing Interaction	71
	3.3	Conceptual Models	74
	3.4	Interface Metaphors	78
	3.5	Interaction Types	81
	3.6	Paradigms, Visions, Theories, Models, and Frameworks	88
	Interview with Albrecht Schmidt		97
4	coc	GNITIVE ASPECTS	101
	4.1	Introduction	101
	4.2	What Is Cognition?	102
	4.3	Cognitive Frameworks	123
5	SOCIAL INTERACTION		135
	5.1	Introduction	135
	5.2	Being Social	136
	5.3	Face-to-Face Conversations	139

	5.4	Remote Conversations	143
	5.5	Co-presence	150
	5.6	Social Engagement	158
6	EMO	DTIONAL INTERACTION	165
	6.1	Introduction	165
	6.2	Emotions and the User Experience	166
	6.3	Expressive Interfaces and Emotional Design	172
	6.4	Annoying Interfaces	174
	6.5	Affective Computing and Emotional Al	179
	6.6	Persuasive Technologies and Behavioral Change	182
	6.7	Anthropomorphism	187
7	INTERFACES		193
	7.1	Introduction	193
	7.2	Interface Types	194
	7.3	Natural User Interfaces and Beyond	252
	7.4	Which Interface?	253
	Inter	view with Leah Buechley	257
8	DAT	A GATHERING	259
	8.1	Introduction	259
	8.2	Five Key Issues	260
	8.3	Data Recording	266
	8.4	Interviews	268
	8.5	Questionnaires	278
	8.6	Observation	287
	8.7	Choosing and Combining Techniques	300
9	DAT	A ANALYSIS, INTERPRETATION, AND PRESENTATION	307
	9.1	Introduction	307
	9.2	Quantitative and Qualitative	308
	9.3	Basic Quantitative Analysis	311
	9.4	Basic Qualitative Analysis	320
	9.5	Which Kind of Analytic Framework to Use?	329
	9.6	Tools to Support Data Analysis	341
	9.7	Interpreting and Presenting the Findings	342

10	DAT	A AT SCALE	349
	10.1	Introduction	349
	10.2	Approaches to Collecting and Analyzing Data	351
	10.3	Visualizing and Exploring Data	366
	10.4	Ethical Design Concerns	375
11	DISC	OVERING REQUIREMENTS	385
	11.1	Introduction	385
	11.2	What, How, and Why?	386
	11.3	What Are Requirements?	387
	11.4	Data Gathering for Requirements	395
	11.5	Bringing Requirements to Life: Personas and Scenarios	403
		Capturing Interaction with Use Cases	415
	Inter	view with Ellen Gottesdiener	418
12	DES	GN, PROTOTYPING, AND CONSTRUCTION	421
	12.1	Introduction	421
	12.2	Prototyping	422
	12.3	Conceptual Design	434
	12.4	Concrete Design	445
	12.5	Generating Prototypes	447
	12.6	Construction	457
	Inter	view with Jon Froehlich	466
13	INTE	RACTION DESIGN IN PRACTICE	471
	13.1	Introduction	471
	13.2	AgileUX	473
		Design Patterns	484
	13.4	Open Source Resources	489
	13.5	Tools for Interaction Design	491
14	INTR	ODUCING EVALUATION	495
	14.1	Introduction	495
	14.2	The Why, What, Where, and When of Evaluation	496
	14.3	Types of Evaluation	500
	14.4	Evaluation Case Studies	507
	14.5	What Did We Learn from the Case Studies?	514
	14.6	Other Issues to Consider When Doing Evaluation	516

## CONTENTS

15 EVALUATION STUDIES: FROM CONTROLLED TO NATURAL SETTINGS		
15.1 Introduction	523	
15.2 Usability Testing	524	
15.3 Conducting Experiments	533	
15.4 Field Studies	536	
Interview with danah boyd	546	
16 EVALUATION: INSPECTIONS, ANALYTICS, AND MODELS	549	
16.1 Introduction	549	
16.2 Inspections: Heuristic Evaluation and Walk-Throughs	550	
16.3 Analytics and A/B Testing	567	
16.4 Predictive Models	576	
References		
Index		