

Contents

1	Introduction	1
1.1	The Digitised Image and Face Recognition Technology	1
1.2	Face Recognition Technology	2
1.3	Face Recognition Technology and Privacy	3
1.4	Face Recognition Technology and Surveillance	5
1.5	Face Recognition Technology and Its Ethical and Legal Implications	5
1.6	Face Recognition Technology and Personal Autonomy	6
1.7	Face Recognition Technology and Big Data	6
	References	7
2	What Is Face Recognition Technology?	9
2.1	Introduction: What Is Face Recognition Technology?	9
2.2	How Does Face Recognition Work?	10
2.3	Face Recognition Algorithms	11
2.4	Other Approaches	14
2.5	Weaknesses and Failures of FRT	15
2.6	Face Recognition Vulnerability	15
2.7	Face Spoofing Counter-Measures	16
2.8	Current Uses of Face Recognition Technology	17
	2.8.1 Passports and Other Government Uses	17
	2.8.2 Law Enforcement	19
	2.8.3 Commerce	20
	2.8.4 Gambling and Banking	22
	References	23
3	Some Ethical and Legal Issues of FRT	27
3.1	Fears and Misconceptions of FRT	27
	3.1.1 Disney World	28
	3.1.2 Driver Licences	28
	3.1.3 New York Domain Awareness System	30

3.2	Some Deeper Issues: FRT, Data Protection and Civil Liberties	31
3.3	Face Recognition: Civil Liberty and Public Disclosure	33
3.3.1	Public Disclosure	34
3.3.2	Public Interest Disclosure and FRT	36
	References	36
4	Privacy and Surveillance Surveyed	39
4.1	Introduction: Privacy and Surveillance	39
4.2	The Data Subject and Surveillance	41
4.3	Biometric Data and Civil Liberties	43
4.4	The Data Subject and Privacy	46
4.5	The Data Subject and Autonomy	46
4.6	Privacy, Informatisation and Photography	49
4.7	The Data Subject and Biometric Data	52
4.8	The Socio-Political Context	53
	References	55
5	Autonomy, Liberty and Privacy	57
5.1	The Concept of Autonomy	57
5.2	Freedom & Privacy	59
5.3	Dworkin's First and Second-Order Autonomy	60
5.4	Autonomy and Freedom	63
5.5	Negative and Positive Liberty	64
5.6	Kafka and Negative Liberty	65
5.7	Foucault's Police and Bentham's Prisoners	66
5.8	Privacy and Autonomy	68
	References	73
6	Compulsory Visibility?	75
6.1	Introduction	75
6.2	Body-Worn Cameras	76
6.3	Compulsory Visibility and Coercion	76
6.4	Compulsory Visibility and Face Recognition	79
6.5	Big Data	80
6.6	Big Data and Face Recognition	81
6.7	Compulsory Visibility and Autonomy	82
	References	84
7	The Law and Data Protection	87
7.1	Introduction	87
7.2	Data Protection and Privacy	89
7.3	Informational Privacy	91
7.4	Data Protection and Privacy: The United States Sectoral Approach	93
7.5	Reconciling US and EU Provisions	96

7.6	Data Protection and Face Recognition	97
7.7	Biometric Data and the Development of the General Data Protection Regulation	101
7.8	Human Rights: Civil Liberty, Privacy and the Law	105
	References	109
8	The Law and Surveillance	113
8.1	Surveillance, Regulatory Power and Rights	113
8.2	Human Rights, Mass Surveillance and UK Case Law	118
8.2.1	Human Rights: Interference	120
8.3	Face Recognition: Accountability and Trust	122
8.4	Face Recognition: Privacy and Image Ownership	122
	References	123
9	State Paternalism and Autonomy	125
9.1	State Paternalism: Active and Passive	125
9.2	Ethics and State Power	127
9.2.1	Liberty and State Power	128
9.2.2	Ethical State Power	130
9.3	Paternalism and FRT	131
9.4	Control, Paternalism and Autonomy	132
9.5	Citizen and State	134
9.6	Face Recognition and Second-Order Preferences	137
9.7	Preventing Harm and the Effect on Second-Order Preferences	138
9.8	Threats to Privacy	142
	References	145
10	State Paternalism and Data	147
10.1	Protecting Privacy: Data Protection and the Political Dimension	147
10.2	Protecting Privacy: UK Data Protection and the Face Recognition Paradigm	151
10.3	Data Processing and Second-Order Preferences	154
10.4	The Data Subject and Face Recognition Systems [State Data-Mining Power]	156
	References	160
11	The Future of Face Recognition Technology and Ethico: Legal Issues	163
11.1	Face Recognition: The Future and Its Implications	163
11.2	Threat Recognition and Securitising Identity	163
11.3	Identity Management	166
11.4	Face Recognition and the Human Interface	168
11.4.1	Data and the Human Interface	170
11.5	Predicting Social Concerns and Reactions	172

11.6	Constitutional Safeguards and Rights	174
11.7	Legal and Regulatory Safeguards	176
11.8	Regulating the Commoditisation of Data	180
	References	181
12	Conclusion	185
12.1	Face Recognition Technology and the Right to Personal Image Ownership	185
12.2	Data Ownership: A New Legal and Moral Rights Framework	186
12.3	Democratisation of Technology Development	189
12.4	Personal Identifiable Images and Street Photography	190
12.5	Recommendations	191
	References	192
	Bibliography and Further Reading	195
	Index	199