Abbott, Kenneth W. 36–39, 55, 79, 85, 95, 194
academia, academics, academy see universities
Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) 44, 194
algorithmic decisions 3, 12, 40, 47, 49, 62, 112, 123, 130, 134, 150, 156, 159, 167, 168, 219, 226, 248, 289, 290, 292 see also governance using artificial intelligence algorithms 12, 130
AlgorithmWatch 151, 248–49, 251, 287, 311
Alphabet, Inc. 73–74 see also Google Inc.
Amazon.com 73–74, 90, 93, 100, 109, 124, 132, 151, 157–58, 305
shareholder proposals 81–83
Amirian, E. Susan 171–72
Amnesty International 244, 247, 250–51, 270
Apple Inc. 73–74, 100, 172, 305
arms control 211–12, 230, 275 see also lethal autonomous weapons, military applications of artificial intelligence
artificial intelligence definitions 8–9 see also algorithmic decisions, facial recognition, data, databases, machine learning, natural language processing, synthetic media artificial intelligence races 259–62 artificial intelligence races as detrimental to innovation 145
artificial intelligence research and development 19, 88, 100, 113, 124–26, 139–40, 156, 217, 221, 317–18
cross-border collaborations 130–31
Ashraf, Cameran 288–89, 291
Association for the Advancement of Artificial Intelligence (AAAI) 118–21
Association of Computing Machinery (ACM) 120
Atlassian Corporation Plc 148–49
Aust, Helmut 292
autonomous vessels 1, 14, 211, 314 see also International Maritime Organization
autonomous vehicles 62, 74, 159, 270 international regulation 265–68, 276
Canadian Motor Vehicle Safety Standards 265
U.S. Federal Motor Vehicle Safety Standards 265
Working Party on Automated/Autonomous and Connected Vehicles (GRVA) 265–66
Benvenisti, Eyal 174–76, 207–208, 228, 245–47, 292
Berliner, Daniel 214–15
Bielefeldt, Heiner 285, 296–98
Boule, Laurence vi, 34–36, 42–45, 80
Brazil 84, 101, 140–41, 144, 160, 221–22, 235, 270
Brownsword, Roger 175–76, 298
business entities and non-governmental organizations under international law
businesses entities 311–14
non-governmental organizations 244
California Consumer Privacy Act 156
Cath, Corinne 277
Chen, Yu-Jie 294, 295–96
Chiao, Elizabeth Y. 171–72
China 74
- bans on social media 163
- Beijing Effect 146, 263
- colonial history 182
- developers and programmers 107–108
- Digital Silk Road Initiative 5, 262–64, 276
- Hong Kong 66, 78, 163, 239–40, 293
- human rights 293–96
- international relations 221, 257
- international standards 228–29, 263–64
- national AI strategy 140–43
- national security 142
- non-governmental organizations 238, 241–42
- relations with the United States 77, 162–63, 260–61 see also artificial intelligence races
- stock markets 78
- surveillance 163, 168
- Tiananmen Square 296 see also Chinese legislation, lethal autonomous weapons, Xinjiang

Chinese legislation
- Cybersecurity Law 154–55
- Data Security Law 155–56
- Personal Information Protection Law 155–56
- proposed Internet Information Service Deep Synthesis Management Provisions 254
- Chiu, Iris H-Y 2, 34, 45–55, 78, 80–81, 84, 95, 307
- Choudhury, Barnali 34–35, 302–305
- Chihon, Peter 67, 229–31
- civil society vi, 1, 3–4, 33, 97
- conceptions of civil society 233–35
- legitimizing role in international organizations 233
- participations in policymaking 97–98, 154, 197, 207, 222, 224, 226, 235–36, 247
- relations with technology firms 102
- source of information for international organizations 250 see also non-governmental organizations, social movements and activism
civil society organizations see non-governmental organizations
Clark, Eva 171–72
Clearview AI 77, 150, 157–58
climate change 22, 179–80, 229–30, 318
cloud computing 28, 30, 74, 82, 90–91, 149, 157, 160 see also data localization requirements, environmental impacts of artificial intelligence
Cobbe, Jennifer 173–75
codes of conduct 57, 88, 144, 148
Collingridge, David 25–26
Collingridge’s dilemma 25–26, 28, 33, 45, 51, 55, 63, 195
complexity theory 26, 57, 69–70, 316
Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) 191–93, 200
corporate social responsibility (CSR) 2, 52–53, 83–87, 197–98 see also United Nations Global Compact
corporations
shareholder primacy 2, 53, 80–81, 106
shareholder proposals 81–83
COVID-19 pandemic 66, 166, 170–72
Dafoe, Allan 23–24, 123, 277
data see machine learning: training, testing, and validation
data localization requirements 160–62, 184
under GATS 188–90 see also data transfers
data transfers
under the Comprehensive and Progressive Agreement for Trans-Pacific Partnership and United States–Mexico–Canada Agreement 191–93 see also data localization requirements, General Data Protection Regulation: data transfers
Databases 1, 149, 167–70, 172, 188
developers and programmers 107–16
demand for 108–109, 115
education 108–109
everse and ethics training 110–12
ehos of developers and programmers 115
influence in the workplace 112–14
professionalization of developers and programmers 114–16 see also professional associations
salaries 109
statistics 107–109
Doezema, Tess 217–18, 227–28
Dunford, Robin 244, 298–99
Electronic Frontier Foundation 248–49
Elkin-Koren, Niva 103, 175
enforcement of norms 4, 35, 37–39, 86, 199, 242, 245, 296
enforcement mechanisms 67–68 see also human rights: enforcement
see also non-governmental organizations: enforcement of international norms
Ensmenger, Nathan L. 25, 108, 112–15
environmental impacts of artificial intelligence 22
Erdélyi, Olivia J. 34, 230–31
ethics codes 118–21 see also statements of ethics or principles
export controls 77, 162–63, 130–31, 162–63, 187
European Union
Brussels Effect 146–47 see also European Union legislation, General Data Protection Regulation
extraterritorial application of law 3, 155–56, 198, 309–10, 313 see also General Data Protection Regulation: extraterritorial application
European Union legislation
Artificial Intelligence Act 46, 60, 147, 151, 153–54, 192
Digital Markets Act 150
Digital Services Act 151–52 see also General Data Protection Regulation
Facebook 18, 73–74, 102–103, 109, 151, 157–58, 163, 238, 250
infrastructure projects in Africa 102 see also Meta
bans and moratoria 60, 90
Ferguson, Andrew Guthrie 168–70
Filgueiras, Fernando 140–41
foreign direct investment 17
Frahm, Nina 217–18, 227–28
generative artificial intelligence see synthetic media
General Agreement on Tariffs and Trade (GATT) 231
General Agreement on Trade in Services (GATS) 188–91
GitHub 132
Global Partnership on Artificial Intelligence (GPAI) 222–27, 230–31
General Data Protection Regulation (GDPR) 92, 96, 147–50, 155–57, 172
data transfers 148
extraterritorial application 147–49
principles 52
rights of data subjects 149–50
sanctions 147
Goldsmith, Judy 34, 230–31
Google Inc. 72, 74, 89–90, 100, 109, 114, 124, 132, 151, 157–58, 172, 250–51, 305
AI principles 85, 89–90, 113
defense contracts 113
governance 23–24
governance of artificial intelligence
design stage 90–92
need for international governance 12–24
technological approaches 133–36
see also Collingridge’s dilemma
governance using artificial intelligence 164–76
criticisms 173–76
government services 142–43, 167–70, 174
machine-readable legislation 165
policymaking 165–66
regulatory intervention 166–67
see also law enforcement, COVID-19 pandemic
Gutierrez, Carlos Ignacio 56, 58–59, 67–68, 88–89
human rights
artificial intelligence applications and human rights 248–51, 270, 286–92
as a set of institutions and practices 278, 280
as a basis for governance of artificial intelligence 277–314
as established by international human rights treaties and other international law 279–80, 200
as legal rights 279
as principles 212, 215, 222–23, 278, 302–303
business and human rights 5–6, 198–99, 302–14
colonialism and human rights 282–84
content display and human rights 288
content moderation and human rights 288–89
criticisms of human rights 281–301
China and human rights 293–96
Council of Europe draft convention on artificial intelligence, human rights, democracy, and the rule of law 249, 251–52, 311–14
decolonizing human rights 284–86, 296–99
draft treaty on business and human rights 307–311
International Covenant on Civil and Political Rights 279, 287, 294
International Covenant on Economic, Social and Cultural Rights 280, 284, 306
Islam and human rights 285, 297
non-governmental organizations and human rights 242, 246, 248–51
privacy as a human right 289–91, 301
states and human rights 293 see also human rights: China and human rights
technology company business models and human rights 290–91
technology company adoption 305–306 see also corporate social responsibility
United Nations High Commissioner for Human Rights open-ended intergovernmental working group (OEIGWG) 307–12
United Nations Human Rights Council 198, 280, 289–90, 304 see also human rights: United Nations High Commissioner for Human Rights open-ended intergovernmental working group
United Nations Office of the High Commissioner for Human Rights (UNHCHR) 247
Universal Declaration of Human Rights 279, 281, 284, 287, 306
Vienna Declaration and Programme of Action 281, 284, 286, 294
humanitarian law see law of war
IBM 72–74, 85, 89–90, 132, 134, 299, 305
AI ethics statement 90
Illinois Biometric Privacy Act 157–58
India 74, 141, 221–22, 235
industry associations
BSA | The Software Alliance 100, 141, 220–21, 249
International Chamber of Commerce 98, 310
TechNet 100–101
innovation and economic development 124–25, 142–43, 217–18
innovation and regulation 152, 225
intellectual property and innovation 193, 195
institutions and innovation 217–18, 222–23, 239, 252–53 see also artificial intelligence races: artificial intelligence races as detrimental to innovation, technology: technological change and pace of development, universities: contributions to innovation
Institute of Electrical and Electronics Engineers (IEEE) 118, 120–22, 216, 218
intellectual property 14–15, 93–96, 101, 126, 130, 254
international intellectual property 3, 193–96, 200–201, 232, 276, 318 see also Agreement on Trade-Related Aspects of Intellectual Property Rights
International Committee of the Red Cross (ICRC) 242–43, 271, 275
international finance 15–16
international human rights see human rights
international investment agreements 43, 187–89, 201
international law 1, 3–4, 35–36, 178–202, 278, 311–13, 316
colonialism and international law 258, 281
critiques of international law 178–83
customary international law 185–86, 278
general principles of international law 186
incorporated into statements of ethics or principles 89
international actors under international law 244
jus cogens norms 186, 244
resistance to international law 236–37 see also business entities and non-governmental organizations under international law, international organizations: status under international law, states, non-governmental organizations, law of war, treaties and conventions

International Maritime Organization (IMO) 210–11 see also autonomous vessels

International Organization for Standardization (ISO) 84, 215–16, 265, 300

international organizations vi, 1–4, 19, 37, 44–45, 55, 68–70, 123, 133, 203–32, 242, 257, 259, 271, 298, 301, 305, 316–17

agent-principal paradigm 204–205

as administrative agencies 174–75, 203–204, 247–50

role in international norm formation 205–27, 274

international organization for artificial intelligence 228–31

legitimacy of international organizations 200, 206–207, 233, 245–46

status under international law 178, 199


international peace and security 1, 13, 19–21, 232, 235, 268, 276, 314, 318 see also arms control, China: relations with the United States, law of war, lethal autonomous weapons, military applications of artificial intelligence, national security, Ukraine

international public health 13, 23 see also COVID-19 pandemic

international relations 24, 190, 204–205, 236–37, 257–76
theories of international relations 257–59 see also artificial intelligence races, China: Digital Silk Road Initiative, China: relations with the United States, lethal autonomous weapons

International Telecommunication Union (ITU) 209–211, 215–16, 263–64


comparative advantage 14–15, 42 see also Comprehensive and Progressive Agreement for Trans-Pacific Partnership, data localization requirements, General Agreement on Tariffs and Trade, General Agreement on Trade in Services, national treatment requirement, most favored nation requirement, United States–Mexico–Canada-Agreement, World Trade Organization

Islam and artificial intelligence 12 see also human rights: Islam and human rights

Japan 74, 159–61, 191, 213–14, 220–22, 265

Kemp, Luke 229–31

Kerry, Cameron F. 261–62
large language models (LLMs) 9, 74, 88, 114, 135
Latonero, Mark 235, 287
law enforcement 46–47, 60, 69, 82–81, 153, 158, 161, 167–70, 240, 242, 283, 287, 313 see also facial recognition
law of war 44, 270–74, 209
command responsibility 272–73
legislation vi, 3, 35, 102, 139, 158
as expressing social, economic and cultural commitments 145, 177, 317
as implementing international or regional norms 44, 84, 199, 250–51, 308, 312 see also California Consumer Privacy Act, Chinese legislation, European Union legislation, General Data Protection Regulation, Illinois Biometric Privacy Act, Japan
lethal autonomous weapons (LAWS) 1, 5, 20, 60, 62, 113, 242, 268–75
Group of Government Experts on LAWS 271–75
Maas, Matthijs 229–31
models and modeling 4, 10–12, 16, 21, 61–62, 65, 93, 108, 110, 134–35, 158, 160, 166, 175, 194, 219–20 see also large language models
neural networks 11, 64, 93, 162, 219
supervised learning and unsupervised learning 11–12
training, testing, and validation 4, 11–12, 61, 93, 110, 160, 162, 175, 194, 201, 248, 253
Marchant, Gary 56, 58–59, 67–68, 88–89
market ‘law’ of the market 42
law supporting the market 42–45 see also contracts, corporations, COVID-19 pandemic, developers and programmers: demand for, developers and programmers: salaries, General Agreement on Tariffs and Trade, General Agreement on Trade in Services, industry associations, innovation, intellectual property, international finance, international investment agreements, international trade: comparative advantage, international trade in goods and services, regulation: market-based regulation, regulation: transactional governance, technology companies: funding for start-ups and medium-sized firms, technology companies: market capitalization of large firms, venture capital
Melzer, Joshua P. 261–62
Meta 73, 100, 132, 213, 250, 305 see also Facebook
Meyer, Trisha 235, 241
Microsoft Corporation 72–74, 109, 125–26, 132, 151, 157, 208, 212–13, 305
agreement with OpenAI 88, 90–91
defense contracts 113–14
harms modeling 90–91
withdrawal of investment in AnyVision 77–78 see also Ukraine
military applications of artificial intelligence 1, 19–21, 113, 123, 142, 161–62, 260, 268–71, 274 see also arms control, international peace and security, lethal autonomous weapons
Morrison, John 176, 291–92
most favored nation requirement 188, 231
national strategies for artificial intelligence 139–45, 184, 293
national treatment requirement 3–4, 188 see also data localization requirements
natural language processing (NLP) 11–12, 22, 74, 103, 118, 134–35, 165–67 see also large language models
norm entrepreneurs 41–42 see also norms
international actors as norm entrepreneurs see international organizations: role in international norm formation, non-governmental organizations: international norm formation, technology companies: role in norm formation, trade associations
norms
competencies in norm formation 37–39
norm formation cycles or stages 36–37 see also legislation, norm entrepreneurs, statements of ethics or principles, regulation, regulatory methods for artificial intelligence applications
non-governmental organizations 39–40, 55, 68, 96, 142, 241–52
definitions 241
enforcement of international norms 205, 236, 245, 247–52, 296, 302–303
history at the international level 242 in authoritarian states 241–42
international norm formation 4, 36–37, 218, 242, 270–71, 275, 313, 317
legitimacy 236, 244–45
strategic behavior 245–46 see also AlgorithmWatch, Amnesty International, Partnership for AI, Electronic Frontier Foundation, civil society, social movements and activism
OECD AI Policy Observatory 139–41
online content moderation 102–104, 135–36, 175, 248, 288–89
OpenAI 87–88
agreement with Microsoft 88, 90–91
guiding principles 88
openness as a norm for AI development and applications 129–33
opensource movement 131–32
opensource software at the international level 133
OECD Recommendation on Artificial Intelligence 217–21, 223
Partnership for AI (PAI) 252–54
Pfotenhauer, Sebastian 217–18, 227–28
platforms and technical infrastructure 29–30, 44, 105, 139, 159, 165, 238, 253–54 see also China: Digital Silk Road Initiative, Facebook: infrastructure projects in Africa
Prakash, Aseem 214–15
professional associations 2, 41, 68, 89, 114–23, 218, 221, 233–34, 252, 316
functions 116–18 see also
Association for the Advancement of Artificial Intelligence, Association for Computing Machinery, Institute of Electrical and Electronics Engineers
public and private functions in society 3, 49–50, 54–55, 101–105
Radu, Roxana 36, 54, 141–42
Rawls, John 279, 297
Reinalda, Bob 204–208, 230
regulation
market-based regulation 48–50
responsibleization 47–48, 92
risk analysis 26, 31, 91, 248 see also regulatory methods for artificial intelligence applications: algorithmic impact assessments and audits
self-regulation 50–53
transactional governance 47 see also contracts
see also legislation, international organizations, norms, regulatory methods for artificial intelligence applications
regulatory methods for artificial intelligence applications
algorithmic impact assessments and audits 49–50
The international governance of artificial intelligence

states 138–77
capacities and limitations in norm formation cycle 37
data sovereignty 161, 263
independence and equality of states 37, 183, 203, 295
nations in contrast to states 138–40
power of states vis-à-vis other international actors 138, 200, 208, 246, 259
predominance of states in international norm formation 186, 200, 203, 208, 251–52
sovereignty 161, 181, 183–86, 198, 206, 254, 281, 295–96, 301
see also China, India, Japan, legislation, United Kingdom, United States

synthetic media
intellectual property 194
Partnership for AI draft code on synthetic media 253–54 see also Chinese legislation

technology
conceptions of technology 24–25
definitions 9–10
technological change and pace of development 28–33
technology companies
funding for start-ups and medium-sized firms 74–76
market capitalization of large firms 72–73
role in norm formation 96–98, 141, 224 see also industry associations
see also Alphabet, Inc. Amazon.com, Apple Inc., Atlassian Corporation Plc, Facebook, Google Inc., IBM, Meta, OpenAI, Snowflake, Inc.
technology lifecycles 31–33, 36, 63, 66–67, 100, 219–20, 300
TikTok 18, 163
Tjahja, Nadia, 235, 241
treaties and conventions 44, 186–87, 201, 203
pacta sunt servanda 284, 293
Vienna Convention on the Law of Treaties 187

Uhlin, Anders 216, 234–36, 241, 251–52
Ukraine 104–105
United Kingdom 66, 74, 159, 173, 220–22, 235
United Nations 104, 207, 208, 243
World Trade Organization (WTO) 13–15, 180, 188–90, 194, 205–206, 216, 231 see also General Agreement on Tariffs and Trade, General Agreement on Trade in Services

Yeung, Karen 173–74
Yew, Lee Kuan 282
Zhao, Jun 282, 286, 298

Xinjiang 77, 78, 250–51, 261