1.	Record Nr.	UNINA9910555237103321
	Autore	Barachini Franz
	Titolo	From Digital Twins to Digital Selves and Beyond : Engineering and Social Models for a Trans-humanist World / / by Franz Barachini, Christian Stary
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
	ISBN	3-030-96412-4
	Edizione	[1st ed. 2022.]
	Descrizione fisica	1 online resource (xviii, 127 pages) : illustrations (some color)
	Collana	Computer Science Series
	Classificazione	COM004000COM079000TEC007000
	Altri autori (Persone)	StaryChristian
	Disciplina	303.4834
	Soggetti	Computers and civilization Artificial intelligence Cooperating objects (Computer systems) Computers and Society Artificial Intelligence Cyber-Physical Systems Transhumanisme Intel·ligència artificial Objectes cooperants (Sistemes informàtics) Llibres electrònics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Description based upon print version of record.
	Nota di contenuto	1. Major Historical Landmarks in Computer Science -- Part I: Digital Twins: Advent and Trans-human Development -- 2. Background and Foundations -- 3. Beyond Data: Unifying Behavior Modeling -- Part II: Social Behavior of Artificial Agents -- 4. Background and Motivation -- 5. Simulation Methods and Game Theory -- 6. Social Dilemmas and Problems of Social Order -- 7. Emotional Modeling with Spatial Games -- 8. Agent-Based Stochastic Simulation of Emotions -- Part III: A Symbiosis -- 9. System-of-Systems Thinking -- 10. Provision of Information as Relational Task -- 11. Enabling Contextual Adaptation -- 12. Embodying Social Behavior -- 13. How to Create Digital Selves.
	Sommario/riassunto	This open access book aims at deepening the understanding of the relation between cyber-physical systems (CPSs) as socio-technical

systems and their digital representations with intertwined artificial intelligence (AI). The authors describe why it is crucial for digital selves to be able to develop emotional behavior and why a humanity-inspired AI is necessary so that humans and humanoids can coexist. The introductory chapter describes major milestones in computer science which form the basis for the implementation of digital twins and digital selves. The subsequent Part I then lays the foundation to develop a socio-technical understanding of the nature of digital twins as representations and trans-human development objects. Following the conceptual understanding of digital twins and how they could be engineered according to cognitive and organizational structures, Part II forms the groundwork for understanding social behavior and its modeling. It discusses various perception-based socio-emotional approaches before sketching behavior-relevant models and their simulation capabilities. In particular, it is shown how emotions can substantially influence the collective behavior of artificial actors. Part III eventually presents a symbiosis showing under which preconditions digital selves might construct and produce digital twins as integrated design elements in trans-human ecosystems. The chapters in this part are dedicated to opportunities and modes of co-creating reflective socio-trans-human systems based on digital twin models, exploring mutual control and continuous development. The final epilog is congenitally speculative in its nature by presenting thoughts on future developments of artificial life in computational substrates. The book is written for researchers and professionals in areas like cyber-physical systems, robotics, social simulation or systems engineering, interested to take a speculative look into the future of digital twins and autonomous agents. It also touches upon philosophical aspects of digital twins, digital selves and humanoids.