

1. Record Nr.	UNISA996464512003316
Autore	P Deepak
Titolo	Data science for fake news : surveys and perspectives // Deepak P. [and three others]
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-62696-2
Descrizione fisica	1 online resource (308 pages)
Collana	The Information Retrieval ; ; v.42
Disciplina	070.4
Soggetti	Fake news Journalism - Data processing Data mining
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- Preface -- Acknowledgments -- Contents -- A Multifaceted Approach to Fake News -- 1 Introduction -- 2 Surveys -- 2.1 Unsupervised Methods for Fake News Detection -- 2.2 Multimodal Fake News Detection -- 2.3 Deep Learning Methods for Fake News Detection -- 2.4 Dynamics of Fake News Diffusion -- 2.5 Neural Text Generation -- 2.6 Fact Checking on Knowledge Graph -- 2.7 Graph Mining Meets Fake News Detection -- 3 Perspectives -- 3.1 Fake News in Health Sciences -- 3.2 Ethical Considerations in Data-Driven Fake News Detection -- 3.3 A Political Science Perspective on Fake News -- 3.4 Fake News and Social Processes -- 3.5 Misinformation and the Indian Election -- 3.6 Science and Technology Studies (STS) and Fake News -- 3.7 Linguistic Approaches to Fake News Detection -- 4 Concluding Remarks -- References -- Part I Survey -- On Unsupervised Methods for Fake News Detection -- 1 Introduction -- 1.1 Paradigms of Machine Learning vis-a-vis Supervision -- 1.2 Challenges for Unsupervised Learning in Fake News Detection -- 2 Unsupervised Fake News Detection: A Conceptual Analysis -- 2.1 Conceptual Basis for UFND Methods -- 2.2 Critical Analysis of UFND Conceptual Bases -- Truth Discovery -- Differentiating User Types -- Propagandist Patterns -- Inter-user Dynamics -- 2.3 Building Blocks for UFND -- 3 Unsupervised Fake News Detection: A Methodological Analysis -- 3.1 Truth Discovery

-- 3.2 Differentiating User Types -- 3.3 Propagandist Patterns -- 3.4 Inter-user Dynamics -- 4 The Road Ahead for Unsupervised Fake News Detection -- 4.1 Specialist Domains and Authoritative Sources -- 4.2 Statistical Data for Fake News Detection -- 4.3 Early Detection -- 4.4 Miscellaneous -- Maligning Brands Through Fake Information -- Explainability in UFND -- 5 Conclusions -- References -- Multi-modal Fake News Detection -- 1 Introduction. 2 Challenges and Opportunities -- 3 Multi-modal Fake News Datasets -- 3.1 Fake Microblog Datasets -- 3.2 Fake News Datasets -- 4 State-of-the-Art Models -- 5 Unsupervised Approach -- 6 Early Fusion Approaches -- 6.1 JIN -- 6.2 TI-CNN -- 6.3 MKEMN -- 6.4 SpotFake and SpotFake+ -- 6.5 MCE -- 6.6 SAFE -- 7 Late Fusion Approaches -- 7.1 AGARWAL -- 7.2 MVNN -- 8 Hybrid Fusion Approach -- 9 Adversarial Model -- 9.1 SAME -- 10 Autoencoder Model -- 11 Summary of the Chapter -- References -- Deep Learning for Fake News Detection -- 1 Introduction -- 1.1 Fake News Types -- 1.2 Early Works -- 2 Deep Learning Methods -- 2.1 Fake News Detection Using CNN -- 2.2 Fake News Detection Using RNN and Its Variants -- 2.3 Multimodal Methods -- 3 Datasets and Evaluation Metrics -- 3.1 Datasets -- 3.2 Evaluation Metrics -- 3.3 Discussion -- 4 Trends in Fake News Detection Using Deep Learning -- 4.1 Geometric Deep Learning -- 4.2 Explainable Fake News Detection -- 4.3 Profiling Fake News Spreaders -- 4.4 Neural Fake News Detection -- 4.5 Discussion -- 5 Conclusion -- References -- Dynamics of Fake News Diffusion -- 1 Introduction -- 2 Fake News Diffusion on Facebook -- 3 Fake News Diffusion on Twitter -- 4 Role of Bots in Spreading Fake News -- 5 Trees for Modeling Information Diffusion -- 6 Identifying the Sources of Fake News -- 7 Modeling Fake News Diffusion -- 7.1 Susceptible-Infected-Recovered (SIR) Model -- 7.2 Dynamic Linear Threshold (DLT) -- Network Construction -- Problem Definition -- Component I: Diffusion Dynamics -- Component II: Updating Personal Belief -- Component III: Misinformation Blocking -- 7.3 Percolation Model -- Network Components -- Adoption of Information -- Branching and Size of Cascade -- Parameter Estimation -- 7.4 Spread-Stifle Model -- How the Spread-Stifle Model Differs from Others? -- Mean-Field Approach -- Reachability Probabilities. Transition Probabilities -- Mean-Field Rate of Change -- 8 Strategies to Minimize the Spread of Fake News -- 9 Summary of the Chapter -- References -- Neural Language Models for (Fake?) News Generation -- 1 Introduction -- 2 Modeling Approaches -- 2.1 Learning Paradigms for NLG -- 2.2 Language Models -- 2.3 Encoder-Decoder Attention -- 2.4 Autoregression -- 2.5 Seq2Seq Model -- 3 Learning Paradigms -- 3.1 Supervised Learning Techniques -- 3.2 Adversarial Learning Techniques -- 3.3 Reinforcement Learning Techniques -- 3.4 Embedding Techniques -- 4 Pre-trained Language Models -- 4.1 Contextualized Word Vectors (CoVe) -- 4.2 Embeddings from Language Model (ELMo) -- 4.3 BERT -- 4.4 RoBERTa -- 4.5 Transformer-XL -- 4.6 Larger Language Models -- 4.7 XLNet -- 4.8 GROVER -- 4.9 CTRL -- 4.10 Seq2Seq Pre-training Models -- 4.11 Discussion -- 5 (Fake?) News Generation and Future Prospects -- 6 Conclusion -- References -- Fact Checking on Knowledge Graphs -- 1 Introduction -- 2 Preliminaries -- 2.1 Knowledge Graph -- 2.2 RDF -- 3 Models -- 4 Knowledge Linker -- 5 PredPath -- 6 Knowledge Stream -- 7 Conclusion and Future Work -- References -- Graph Mining Meets Fake News Detection -- 1 Characteristics and Challenges -- 2 Graph Models in Fake News Detection -- 2.1 Information -- 2.2 Graph Models -- 3 Unimodal Scenario: Static Graph-Based Methods -- 3.1 Graph Statistics Detection -- 3.2 Dense Subgraph Mining -- 3.3 Benefits and Issues --

4 Multi-modal Scenario -- 4.1 Dynamic Graph-Based Approaches -- 4.2 Graph-Assisted Learning Approaches -- 4.3 Benefits and Issues -- 5 Summary of the Chapter -- References -- Part II Perspectives -- Fake News in Health and Medicine -- 1 Polish Health Misinformation Study -- 2 Stanford University Study: Cannabis, a Cure for Cancer -- 3 NBC News Study -- 4 Dandelion, the Magical Weed -- 5 Polarised Facts. 6 Fake News During the Pandemic -- 7 Consequences of Health Misinformation -- 8 Managing Health Misinformation -- References -- Ethical Considerations in Data-Driven Fake News Detection -- 1 Introduction -- 2 Ethical Dimensions of DFND -- 2.1 Mismatch of Values -- 2.2 Nature of Data-Driven Learning -- 2.3 Domain Properties -- 3 Fairness and DFND -- 4 Democratic Values and Uptake of DFND -- 5 Conclusions -- References -- A Political Science Perspective on Fake News -- 1 Introduction -- 2 The Origins of Fake News -- 3 Fake News in the Twenty-First Century -- 4 Fake News and the Study of Politics -- 5 Conclusion -- References -- Fake News and Social Processes: A Short Review -- 1 Introduction -- 2 Sociological Studies of Disinformation -- 3 Vaccine Hesitancy -- 4 Elections -- 5 Other Social Processes -- 6 Conclusions -- References -- Misinformation and the Indian Election: Case Study -- 1 Misinformation and Disinformation in India -- 1.1 Misinformation and Disinformation in India -- 1.2 Closed Networks for Disinformation -- 1.3 Scale, Prevalence, and Complexity of the Problem -- 1.4 Early Solutions and Fact-Checking in India -- 2 Logically's Capabilities -- 2.1 Automation to Augment Value -- 2.2 Credibility vs. Veracity -- 3 Credibility Assessment -- 3.1 Credibility Assessment -- Network Analysis -- Metadata -- Content Analysis -- 3.2 Credibility Assessment Methodology During Indian Elections -- Findings During Indian Elections -- Credibility Assessment: Evaluation -- 4 Veracity Assessment -- 4.1 Methodology: The Life Cycle of a Claim -- 4.2 Methodology During Indian Elections -- Findings During Indian Elections -- Evaluation -- 5 WhatsApp Solution for a Sharing Nation -- 5.1 Long-Standing Questions -- 5.2 Related Work -- 5.3 Exposing Misinformation on Closed Networks -- 5.4 Disseminating Verifications to Audiences Exposed to Mis/Disinformation.

STS, Data Science, and Fake News: Questions and Challenges -- 1 Introduction -- 2 Truth, Power, and Knowledge -- 3 Truth Versus Post-truth -- References -- Linguistic Approaches to Fake News Detection -- 1 Introduction -- 1.1 Defining Fake News -- 1.2 Linguistics, Sub-disciplines, and Methods -- 1.3 News in Linguistics -- 1.4 Deception in Linguistics -- 1.5 Different Texts and Contexts -- 2 Linguistic Approaches to Fake News Detection -- 2.1 Bag of Words and LIWC -- 2.2 Readability and Punctuation -- 2.3 Deep Syntax -- 2.4 Rhetorical Structure and Discourse Analysis -- 3 Conclusions -- References.
