1. Record Nr. UNINA9910984593103321

Autore	Winkler Stephan M
Titolo	Genetic Programming Theory and Practice XXI / / edited by Stephan M. Winkler, Wolfgang Banzhaf, Ting Hu, Alexander Lalejini
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
ISBN	9789819600779 9819600774
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (535 pages)
Collana	Genetic and Evolutionary Computation, , 1932-0175
Altri autori (Persone)	BanzhafWolfgang HuTing LalejiniAlexander
Disciplina	006.3
Soggetti	Artificial intelligence Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Representation & Reachability: Assumption Impact in Data Modeling -- Chapter 2. EvoFeat: Genetic Programming-based Feature Engineering Approach to Tabular Data Classification -- Chapter 3. Deep Learning-Based Operators for Evolutionary Algorithms -- Chapter 4. Survey of Genetic Programming and Large Language Models -- Chapter 5. Evolving Many-Model Agents with Vector and Matrix Operations in Tangled Program Graphs -- Chapter 6. Automatic Design of Autoencoders using NeuroEvolution -- Chapter 7. Code Building Genetic Programming is Faster than PushGP -- Chapter 8. Sharpness-Aware Minimization in Genetic Programming -- Chapter 9. Tree-Based Grammatical Evolution with Non-Encoding Nodes -- Chapter 10. Genetic Programming with Memory for Approximate Data Reconstruction -- Chapter 11. Ratcheted Random Search for Self-Programming Boolean Networks -- Chapter 12. Exploring Non-Bloating Geometric Semantic Genetic Programming -- Chapter 13. Revisiting Gradient-based Local Search in Symbolic Regression -- Chapter 14. It’s Time to Revisit the Use of FPGAs for Genetic Programming -- Chapter 15. Interpretable Genetic Programming Models for Real-World Biomedical Images -- Chapter 16. Crafting Generative Art through

Genetic Improvement: Managing Creative Outputs in Diverse Fitness Landscapes -- Chapter 17. Cell Regulation and the Early Evolution of Autonomous Control -- Chapter 18. How to Measure Explainability and Interpretability of Machine Learning Results -- Chapter 19. Lexicase Selection Parameter Analysis: Varying Population Size and Test Case Redundancy with Diagnostic Metrics -- Chapter 20. Using lineage age to augment search space exploration in lexicase selection.

Sommario/riassunto

This book brings together some of the most impactful researchers in the field of genetic programming (GP), each one working on unique and interesting intersections of theoretical development and practical applications of this evolutionary-based machine learning paradigm. Topics of particular interest for this year´s book include powerful modeling techniques through GP-based symbolic regression, novel selection mechanisms that help guide the evolutionary process, modular approaches to GP, and applications in cybersecurity, biomedicine, and program synthesis, as well as papers by practitioner of GP that focus on usability and real-world results. In summary, readers will get a glimpse of the current state-of-the-art in GP research.