

1. Record Nr.	UNINA9910491030303321
Titolo	Provenance and annotation of data and processes : 8th and 9th international provenance and annotation workshop, IPAW 2020 + IPAW 2021, virtual event, July 19-22, 2021, proceedings // Boris Glavic, Vanessa Braganholo and David Koop (editors)
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-80960-9
Descrizione fisica	1 online resource (274 pages)
Collana	Lecture Notes in Computer Science ; ; v.12839
Disciplina	005.74
Soggetti	Database management Electronic data processing documentation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Provenance Capture and Representation -- A Delayed Instantiation Approach to Template-Driven Provenance for Electronic Health Record Phenotyping -- 1 Introduction -- 2 The Revised Template Model -- 3 The Capture Service -- 4 The Query Service -- 4.1 Document Views -- 4.2 Query Templates -- 5 Implementation -- 6 Evaluation -- 7 Related Work -- 8 Conclusions and Future Work -- References -- Provenance Supporting Hyperparameter Analysis in Deep Neural Networks -- 1 Introduction -- 2 Related Work -- 2.1 Machine- and Deep Learning-Specific Approaches -- 2.2 Domain-Agnostic Approaches -- 3 DNNProv and Keras-Prov -- 3.1 Provenance Model -- 3.2 Architecture of DNNProv and Keras-Prov -- 3.3 Using DNNProv and Keras-Prov -- 4 Evaluation -- 5 Conclusions -- References -- Evidence Graphs: Supporting Transparent and FAIR Computation, with Defeasible Reasoning on Data, Methods, and Results -- 1 Introduction -- 1.1 Motivation -- 1.2 Related Work -- 2 Methods -- 3 Results -- 4 Discussion -- References -- The PROV-JSONLD Serialization -- 1 Introduction -- 2 Example -- 3 PROV-JSONLD Schema -- 3.1 Preliminary Definitions -- 3.2 Encoding a PROV Expression -- 3.3 Encoding a PROV Document and a PROV Bundle -- 4 PROV-JSONLD Context -- 4.1 Default Context Elements -- 4.2

Contexts for PROV Elements -- 4.3 Contexts for PROV Relations -- 5 Interoperability Considerations -- 6 Implementation and Evaluation -- 7 Conclusion -- References -- Security -- Proactive Provenance Policies for Automatic Cryptographic Data Centric Security -- 1 Introduction -- 2 The ACDC FaaS Paradigm -- 3 ACDC Provenance Model -- 4 A Case Study on Detecting Voter Fraud in E-Voting -- 4.1 ACDC E-Voting Scenario -- 4.2 Voter Fraud Scenarios -- 4.3 Challenges of Voting Provenance -- 5 Related Work -- 6 Conclusion and Future Work -- References.

Provenance-Based Security Audits and Its Application to COVID-19 Contact Tracing Apps -- 1 Introduction -- 2 Development of the "Corona-Warn-App" -- 3 Provenance of Repositories -- 3.1 Generating Retrospective Provenance for Git Repositories -- 3.2 Using and Analyzing Provenance-An Example -- 4 Code Audit with Static Analysis -- 5 Provenance-Driven Code Analysis -- 6 Case Study: Corona-Warn-App -- 7 Related Work -- 8 Conclusions and Future Work -- References -- Provenance Types, Inference, Queries and Summarization -- Notebook Archaeology: Inferring Provenance from Computational Notebooks -- 1 Introduction -- 2 Related Work -- 3 Definitions -- 3.1 Provenance -- 4 Data and Statistics -- 4.1 Notebooks -- 4.2 History -- 5 Algorithm -- 5.1 Base Algorithm -- 5.2 Informed Algorithm -- 6 Evaluation -- 7 Discussion -- 8 Conclusion -- References -- Efficient Computation of Provenance for Query Result Exploration -- 1 Introduction -- 2 Preliminaries -- 2.1 Query Language -- 2.2 Provenance Definition -- 2.3 Dependencies -- 3 Optimizing Provenance Queries Without Materialization -- 3.1 Provenance Query Optimization Algorithm -- 4 Optimizing Provenance Queries with Materialization -- 4.1 Determining the Keys to Be Added to the Materialized View -- 5 Evaluation -- 5.1 Usefulness of Our Optimization Rules -- 5.2 Usefulness of Materialization -- 6 Related Work -- 7 Conclusions and Future Work -- References -- Incremental Inference of Provenance Types -- 1 Introduction -- 2 Background and Definitions -- 3 Provenance Types -- 3.1 Library of Types -- 3.2 Creating a Provenance Types Library -- 4 Incremental Inference of Provenance Types -- 4.1 Monotonically Increasing Streams -- 4.2 Non-monotonically Increasing Streams -- 5 Empirical Evaluation -- 6 Related Work -- 7 Conclusions and Future Work -- References -- Reliability and Trustworthiness.

Non-repudiable Provenance for Clinical Decision Support Systems -- 1 Introduction -- 2 Related Work -- 3 A Non-repudiation Policy for Decision Support -- 4 A Provenance-Based Model for Non-repudiable Evidence -- 4.1 Templates for Meta-provenance -- 4.2 A Template for Non-repudiable Evidence -- 5 A Non-repudiation Architecture for Decision Support -- 5.1 Non-repudiable Evidence Generation and Recording Process -- 5.2 Non-repudiable Evidence Verification Process -- 6 Implementation -- 7 Evaluation -- 7.1 Experiments and Results -- 8 Conclusions and Future Work -- References -- A Model and System for Querying Provenance from Data Cleaning Workflows -- 1 Introduction -- 2 Modeling Interactive Data Cleaning Workflows -- 2.1 DCM: A Data Cleaning Model for OpenRefine Provenance -- 2.2 The ORPE Provenance Harvester for OpenRefine -- 2.3 The ORPE Provenance Querying and Reporting Module -- 3 Example Provenance Queries -- 4 Relation to Other Provenance Models and Prior Work -- 5 Conclusions and Future Work -- Appendix A Sample Provenance Query Output -- References -- Joint IPAW/TaPP Poster and Demonstration Session -- ReproduceMeGit: A Visualization Tool for Analyzing Reproducibility of Jupyter Notebooks -- 1 Introduction -- 2 ReproduceMeGit: An Overview -- 3 Demonstration -- References --

Mapping Trusted Paths to VGI -- 1 Introduction -- 2 Maturity -- 2.1 Linus's Law Maturity -- 2.2 Currency -- 2.3 Life-Cycle Maturity -- 2.4 Volatility -- 2.5 Maintenance Edit Ratio -- 3 Conclusions and Future Work -- References -- Querying Data Preparation Modules Using Data Examples -- 1 Introduction -- 2 Data Model -- 3 Generation of Data Examples -- 4 Querying Modules -- 4.1 Feedback-Based Discovery of Scientific Modules -- 4.2 Incremental Ranking of Candidate Modules -- 5 Conclusions -- References -- Privacy Aspects of Provenance Queries -- 1 Privacy vs. Provenance.

2 Problems Using where, why and how -- 3 Possible Solutions to the Privacy Problem -- References -- ISO 23494: Biotechnology - Provenance Information Model for Biological Specimen And Data-14pt -- 1 Introduction -- 2 Goals of the Standard and Its Structure -- 3 Current Status and Future Development -- References -- Machine Learning Pipelines: Provenance, Reproducibility and FAIR Data Principles*6pt -- 1 Introduction -- 2 The Situation: Characteristics of Machine Learning Experiments and Their Reproducibility -- 3 Towards a Solution: Applying FAIR Data Principles to ML -- 4 Achieving Reproducibility Using ProvBook -- 5 Analysing Reproducibility Using ReproduceMeGit -- References -- ProvViz: An Intuitive Prov Editor and Visualiser -- 1 Introduction -- 2 Background and Related Work -- 3 Demonstration -- 3.1 Loading a PROV Document -- 3.2 Modifying a PROV Document -- 3.3 Visualising a PROV Document -- 3.4 Exporting the PROV Document and Visualisation -- 4 Discussion -- References -- Curating Covid-19 Data in Links -- 1 Introduction -- 2 Links -- 3 Temporal Databases -- 4 Curation Functionality -- 4.1 The Case Study -- 4.2 Provenance-Based Queries -- 4.3 The Prototype Curation Interface -- 5 Conclusion -- References -- Towards a Provenance Management System for Astronomical Observatories -- 1 Context -- 2 Requirements and Current Perception of Provenance -- 2.1 Basic Handling of Provenance -- 2.2 Last-Step Provenance -- 3 A Provenance Management System -- 3.1 Tools, Prototypes and Protocols -- 3.2 Description of the System -- 3.3 Extraction ``On Top" -- 4 Software and Reproducibility -- References -- Towards Provenance Integration for Field Devices in Industrial IoT Systems -- 1 Introduction -- 2 Provenance and Field Devices -- 2.1 Provenance Metadata -- 2.2 Information System Provenance -- 2.3 Workflow Provenance -- 2.4 Data Provenance.

3 Conclusion and Outlook -- References -- COVID-19 Analytics in Jupyter: Intuitive Provenance Integration Using Provt -- 1 Introduction -- 2 Provt -- 2.1 Provenance Authoring Webapp -- 2.2 Template Service Clients -- 2.3 Query Templates -- 3 COVID-19 Analytics -- 4 Conclusion -- References -- CPR-A Comprehensible Provenance Record for Verification Workflows in Whole Tale -- 1 Introduction -- 2 The CPR Toolkit -- 3 Demonstration -- 4 Observations -- 5 Conclusion -- References -- Correction to: ISO 23494: Biotechnology - Provenance Information Model for Biological Specimen And Data -- Correction to: Chapter "ISO 23494: Biotechnology - Provenance Information Model for Biological Specimen And Data" in: B. Glavic et al. (Eds.): Provenance and Annotation of Data and Processes, LNCS 12839, https://doi.org/10.1007/978-3-030-80960-7_16 -- Author Index.
