

Jonathan Malchow Vega

Metadata, Ontology and Taxonomy | Semantic Layering and Knowledge Organization

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Work Authorization: United States citizen. Permanent residency in Spain with authorization to work in Spain and across the European Union (no sponsorship required).

Professional Summary

Senior operations leader and Master of Library and Information Science (MLIS) graduate (Simmons University, Archives and Digital Stewardship) specializing in metadata schema creation, controlled vocabularies, ontology and taxonomy design, authority control, semantic layering, and linked data. Ten plus years of operations leadership across property management, e-commerce, and retail provide direct experience with the data architecture, information governance, stakeholder coordination, and platform implementation that enterprise metadata and taxonomy programs require. Currently co-authoring a peer-reviewed systematic review with Simmons' HCI/VIS Research Group: 892 papers screened across 7 academic databases using PRISMA methodology and a 7-category emergent classification system designed for visualization interaction contexts. Holds a Certificate of Attendance from Taxonomy Boot Camp London 2026 with direct exposure to semantic interoperability, knowledge graphs, ontology design, ISO 25964-1 thesaurus standards, SKOS / RDF linked-data, retrieval-augmented generation (RAG), neuro-symbolic AI, and AI-ready content architectures. Bilingual English / Spanish.

Core Competencies

Metadata Schema Design, Controlled Vocabularies, Authority Control, Taxonomy Design, Ontology Design, Faceted Classification, Semantic Layering, Knowledge Graphs, Linked Data, Metadata Interoperability, Metadata Cross-walking, Reparative Description, Information Governance, Data Architecture, Knowledge Management, Retrieval-Augmented Generation (RAG), Enterprise Platform Implementation, Cross-Functional Stakeholder Coordination, Operations Leadership.

Technical Skills

Metadata Standards: Dublin Core (Simple and Qualified), MARC, CDWA-Lite, PREMIS, EAD3, DACS, MODS, IFLA-LRM, RDA, OAI-PMH, OAI Reference Model.

Vocabularies and Authority Control: Library of Congress Subject Headings (LCSH), LCNAF, LCGFT, Art and Architecture Thesaurus (AAT), ULAN, TGN, TGM, RDF, WikiData, Linked Data, Library of Congress Linked Data Service (id.loc.gov), SKOS, Faceted Classification, ISO 25964-1.

Programming and Data: Python, SQL, MySQL, PHP, HTML, CSS, Java, XML, DTD, XML Schema, XSLT, JSON, LaTeX, BibTeX, Bash, Command Line Interface.

Tools and Platforms: oXygen XML Editor, Omeka, Classification Web, Zotero, BitCurator, DROID, FITS, Library of Congress API, Wikimedia Commons, draw.io, Lucidchart, Miro, Eclipse IDE.

Enterprise and Professional Platforms: Appfolio, QuickBooks, Shopify, Salesforce-style CRM, Calisphere, Archives Portal Europe (APE), Digital Public Library of America (DPLA), WorldCat, HathiTrust.

Languages: English (native), Spanish (professional working proficiency).

Professional Experience

Graduate Research Assistant — HCI/VIS Research Group, Simmons University

Boston, MA | 2025 – Present

- Co-authoring a peer-reviewed systematic review on mid-air hand gesture interaction in data visualization.

- Screened 892 papers across 7 academic databases (ACM Digital Library, IEEE Xplore, Scopus, Semantic Scholar, DBLP, SpringerLink, Wiley) using PRISMA methodology.
- Co-designed a 7-category emergent classification system for visualization interaction contexts (Ubiquitous Analytics, Immersive Visualizations, Instrumented Interaction, Ultrasonic Feedback, Data Physicalization, Multimodal Interaction, Collaborative Sensemaking) with structured per-gesture coding across gesture type, dynamics, scale, handedness, and input mapping.
- Built classification spreadsheets and HTML heatmaps mapping gesture form to interaction effect across the 40-paper corpus.
- Developed the “sensing proximity gradient,” a novel framework adopted as a formal inclusion criterion for the review.

Owner and Operator — SpeedQueen Laundry

Boston, MA | December 2023 – Present

- Founded and operate a full-service laundromat; built recurring B2B client base through strategic outreach, service category data classification, and local market analysis.
- Implemented digital CRM and POS systems for operational data management, inventory tracking, and customer information architecture.

Director of Operations and Business Development — Property Management One

San Francisco, CA | 2015 – 2021

- Led a cross-functional team of 10 plus managing 140 properties (2,200 units); developed standardized data taxonomies, governance workflows, and structured reporting for property owners, HOA boards, and shareholders.
- Sourced and implemented Appfolio platform, defining data architecture, asset classification schemas, metadata standards for property records, and real-time performance analytics across the portfolio.
- Expanded portfolio 25 percent through strategic partnerships; managed budgets, financial reporting, and operational planning while ensuring governance and data continuity across newly acquired assets.

Director of Operations — MindinMotion

San Francisco, CA | 2015 – 2021

- Drove \$500,000 in annual revenue; managed product categorization and taxonomy across Women’s, Men’s, Girl’s, and Accessories lines for wholesale and e-commerce channels.
- Led platform migration from Shopify to QuickBooks, restructuring the company’s data architecture and automating workflows to recover 40 hours per week in labor.
- Sourced manufacturing partners that reduced product cost 28 percent.

Store Manager — Forever 21

Plano, TX | 2013 – 2014

- Increased revenue 30 percent in six months through data-driven sales strategies; achieved highest Units per Transaction in the region (3.5 versus 2.0 goal) and a 23 percent conversion rate versus 17 percent corporate average.

Assistant Business Manager — Alliance Residential Company

Dallas, TX | 2010 – 2013

- Recognized as Assistant Business Manager of the Year (2012) out of 550 colleagues; closed 15 plus leases per month while reducing operating costs 12 percent.

Earlier Career

Assistant to the Executive Director, PRESHCO Study Abroad Consortium (Córdoba, Spain); Doctoral Residency Director, University of Phoenix; Regional Visual Manager, Guess Inc.; Regional Visual Manager, Rainbow Apparel.

Education

Master of Library and Information Science (MLIS), Archives and Digital Stewardship

Simmons University — Boston, MA | Conferred May 2026

Relevant coursework: Controlled Vocabularies and LCSH; Information Organization; Metadata (Dublin Core, CDWA-Lite, PREMIS, RDF, WikiData); Archival Description (DACS / EAD3); Database Management and SQL; Digital Stewardship and Omeka; Digital Forensics (BitCurator, DROID, FITS); Archival Theory and Practice; Management of Archives and Records; International Archives and Metadata Interoperability; Technology for Information Professionals (Python, HTML / CSS, CLI).

Master of Liberal Arts, History (in progress)

Harvard Extension School — Cambridge, MA

Thesis: “The Montagu Case.” Archival reclamation and queer historiography using UK National Archives holdings, Freedom of Information requests, and discourse analysis of bureaucratic records.

Bachelor of Liberal Arts, History and Finance

Harvard Extension School — Cambridge, MA

Professional Development

Taxonomy Boot Camp London 2026 | April 2026 | Certificate of Attendance

Direct exposure to the full curriculum across both tracks, including:

- Semantic interoperability, metadata mapping, minimum viable metadata, SKOS / RDF linked-data standards, interoperable taxonomies, knowledge graphs and ontologies, terminology management, and the semantic layer for generative AI and retrieval-augmented generation (RAG).
- Enhancing taxonomies with ontologies, ISO 25964-1 thesaurus standards, taxonomy management tools (Synaptica, PoolParty, Smartlogic ecosystem), structured content architectures (schema and value vocabularies), third-party dataset integration and data normalization, and content migration strategies for taxonomy preservation.
- LLM-enriched taxonomy workflows, cognitive graphs, and scalable semantic architectures for AI.
- Keynotes on neuro-symbolic AI, scalable semantic systems for human and machine consumption, the role of structured knowledge in grounding trustworthy AI, and the ethical dimensions of AI for information professionals.

Certifications and Licenses

- Taxonomy Boot Camp London 2026 — Certificate of Attendance (April 2026)
- SQL — LinkedIn Learning Certificate
- TESOL Certificate — Massachusetts Bay Community College
- Computer Applications — Rio Salado College
- Licensed Real Estate Agent — Massachusetts
- Licensed Cosmetologist — Massachusetts

Selected Projects and Research

Systematic Review and Taxonomy Design — HCI/VIS Research Group, Simmons University

- Co-designed 7-category emergent classification system for visualization interaction contexts with per-gesture coding across structured dimensions: gesture type, dynamics, scale, handedness, and input mapping.
- Screened 892 papers across 7 databases using PRISMA methodology; built Excel-based classification spreadsheets and HTML heatmaps mapping gesture form to interaction effect.

Stonewall Inn Digital Exhibit — Omeka Platform (stonewallinnpictures.omeka.net)

- Designed and built a digital cultural heritage exhibit applying Dublin Core metadata; contributed images to Wikimedia Commons with structured metadata and Creative Commons licensing.

Metadata Schema Creation and Crosswalking

- Created Dublin Core and CDWA-Lite XML records validated in oXygen XML Editor; applied Getty vocabularies (AAT, ULAN, TGN) for authority-controlled description of cultural heritage objects.
- Built PREMIS preservation metadata records with entity-relationship diagrams; performed RDF crosswalking from Dublin Core to WikiData.

Archival Finding Aid Creation — DACS / EAD3 Encoding

- Built multi-level DACS-compliant finding aids with subject analysis using LCNAF and LCSH; proposed RDA headings for unauthorized names; encoded in EAD3 XML using oXygen.
- Authored reparative description essay critiquing harmful legacy finding aid language, applying Caswell and Rinn frameworks.

Metadata Interoperability Research — Archives Portal Europe

- Analyzed trans-European metadata aggregation infrastructure; compared centralized (NARA) and federated (APE) archival models using EAD and OAI-PMH as interoperability standards.

Relational Database and Web Application

- Designed and implemented a normalized MySQL database (8 plus tables) with hierarchical category structures demonstrating taxonomy-driven data modeling; built PHP / HTML search and CRUD interface.

Born-Digital Metadata Extraction

- Used BitCurator, DROID, and FITS for file format identification, metadata extraction (EXIF, embedded descriptive data), checksum verification, and bulk extraction from disk images.

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Dear Hiring Manager,

My name is Jonathan Malchow Vega, and I am writing to introduce myself and the work I am preparing to do in data architecture, information governance, knowledge management, and the metadata, taxonomy, and ontology disciplines that sit beneath them. I hold a Bachelor of Liberal Arts from Harvard Extension School, am completing a Master of Liberal Arts in History at Harvard Extension School, and earned my Master of Library and Information Science (MLIS) at Simmons University in Archives and Digital Stewardship, conferred May 2026. I am authorized to work in the United States and hold permanent residency in Spain, which permits me to work across the European Union without sponsorship. I am bilingual in English and Spanish.

For more than a decade I led operations across property management, e-commerce, and retail. The work I gravitated toward in every role was the same: how do we structure and classify this data, how do we build governance frameworks that scale, and how do we design platforms where information stays findable, interoperable, and reusable. At Property Management One I governed a portfolio of 140 properties and 2,200 units, established compliance and reporting frameworks for HOA boards, owners, and shareholders, and led the enterprise selection and full implementation of Appfolio. That implementation defined the data architecture, asset classification schemas, role-based access controls, and real-time dashboards that unified reporting across the portfolio. At MindinMotion I managed product taxonomy across multiple retail categories and led a platform migration from Shopify to QuickBooks that restructured the company's data architecture and recovered 40 hours per week in labor. These were not side projects; they were the spine of how those organizations ran.

That instinct led me to library and information science, where I found that the problems I had been solving informally are an entire discipline. At Simmons I built hands-on proficiency in metadata standards (Dublin Core, CDWA-Lite, PREMIS, EAD3, DACS, MODS), authority control (LCSH, LCNAF, AAT, ULAN, TGN), RDF and XSLT crosswalking, normalized relational database design, and faceted classification. I created and validated XML metadata records in oXygen, designed normalized MySQL databases with taxonomy-driven hierarchical structures, encoded multi-level DACS-compliant finding aids in EAD3, and applied controlled vocabularies to build consistent, governed classification systems. I also co-authored a peer-reviewed systematic review with Simmons' HCI/VIS Research Group: I screened 892 papers across seven academic databases using PRISMA methodology and co-designed a 7-category emergent classification system for visualization interaction contexts, with structured per-gesture coding and a "sensing proximity gradient" framework I developed as a formal inclusion criterion. In April 2026 I attended Taxonomy Boot Camp London and hold the Certificate of Attendance from the conference. Across both tracks, the curriculum gave me direct exposure to semantic interoperability, knowledge graphs, ontology design, ISO 25964-1 thesaurus standards, SKOS / RDF linked-data standards, taxonomy management platforms (Synaptica, PoolParty, Smartlogic), structured content architectures, content migration strategies, LLM-enriched taxonomy workflows, cognitive graphs, neuro-symbolic AI, and the role of structured knowledge in retrieval-augmented generation and AI-ready systems.

What I bring is a combination that is uncommon in either pool: someone who has governed complex operational portfolios and stood up enterprise platforms in production, and who can now apply that same discipline to metadata management, ontology and taxonomy design, knowledge management, and the broader semantic layer. I would welcome a conversation about how that combination can contribute to your team, whether the role sits in data architecture, information governance, knowledge management, metadata, taxonomy and ontology, or any of their adjacent functions.

Thank you for your time and consideration.

Sincerely,

Jonathan Malchow Vega