Shawn F. Murphy

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Introduction: Shawn Murphy is a software architect, knowledge engineer, software developer, development team leader, programming coach and trainer. He designs and builds large data-driven, scientific, academic, collaborative, e-commerce and publishing systems. He is fluent in diverse programming languages, knowledge representation technologies, frameworks, visualization tools, RDBMSes, ORMs, APIs, standards, methodologies and architectural styles.

Inspired by emergent phenomena and self-organizing systems, he is focused on exploiting knowledge representation, collaborative filtering, evolutionary pressure and mass customization strategies for building out a global-scale knowledge management ecosystem wherein software, knowledge and presentation co-evolve under the pressure of human opinion – in short, technologically grounding our collective intelligence, so we can meet the challenges of our time.

Professional Specialties:
- Knowledge Representation
- Knowledge Publishing
- Electronic Data Interchange
- Open Source / Free Software
- Test Driven Development
- Asynchronous Web Servers
- Object Relational Mapping
- Identity Management
- Semantic Web
- Collaborative Filtering
- E-Commerce
- Object Oriented Programming
- Dynamic Graphics
- Pattern Languages
- Topic Maps
- NoSQL Datastores

Languages, Formats, APIs and DTDs:

• Python	• Scala	• HTML5	• Angular	• TMAPI
• Javascript	• Perl	• CSS	• Selenium	• Mappa
• Java	• C	• SVG	• DocBook	• OWL
• Coffeescript	• AWK	• XML	• SGML	• OKBC
• Postscript	• Scheme	• JSON	• LaTeX	• LTM
• SQL	• Smalltalk	• jQuery/UI	• Markdown	• CTM
• Bash	• Erlang	• D3	• MARC	• N3
• ObjC	• LISP	• \<canvas\>	• Make	• TriG

Standards Implemented:

• TMDM	• OKBC	• RETS
• Digest Auth	• RBAC	• ANSI X12 EDI

Systems:

• Linux	• OS X	• iOS	• Android
• AS/400	• NeXTstep	• Windows	

Software:

• Emacs	• Bazaar	• GIT	• Eclipse	• VirtualBox
• SQLite	• MongoDB	• Oracle	• MySQL	• PostgreSQL
• Django	• Tornado	• Medusa	• Zope	• PlayFramework
• GIMP	• OpenOffice	• POVRay	• Squeak	• Singly
• NodeJS	• SalesForce	• BeanStream	• GraphViz	• ElasticSearch

Industries:
- Bibliographic Systems
- B2B & B2C E-Commerce
- Real Estate
- Fleet Tracking
- Digital Humanities
- Database Publishing
- Recruiting Systems
- Supply Chain Automation

Experience:

Fullstack Software Engineer   Connectifier
2013 to 2014   Orange County, California
Using Java, Scala, AngularJS, the Play Framework, MongoDB, Elastic Search and
Selenium as part of a startup team to build a category leading recruiting platform.

Architect & Programmer   The Orlando Project
2013 to 2014   Universities of Alberta, Guelph & McGill
Coding and architecting an animated highly interactive semantic visualization research
platform using D3, Canvas, RDF and NodeJS for a university consortium working in
the digial humanities. It features multi-modal interactivity (using direct manipulation;
bulk specification and a novel semantic graph layout specification language) to support
visual exploration of a large text corpus.

CTO, Software Architect   Semandra, Inc.
2011 to 2014   Saltspring Island & Edmonton
Semandra provides full-service front-to-backend website development specializing in
graphics-intensive designs with multimedia integration, database-driven backends with
complex programming requirements, and content-rich user-maintainable CMS sites.

- Ponderate — an agile, collective knowledge curation and evaluation tool
- TOBFleet — a RESTful web service which simplifies vehicle fleet integrations
- Theamatic — a web application for repertory theatre and film festival management.
- CReturns — a graphical scheduling system, e-commerce solution and SalesForce integration for this home energy auditing and retrofitting service

Principal   smurp.com
2002 to 2011   Edmonton, AB
Smurp.com provided contract programming and consulting services with a focus on
database-backed web sites and complex data processing operations.

- Nooron — an experimental knowledge publishing and collaboration environment featuring knowledge-based web-apps such as: project management, pattern languages, blogging and FAQs. It published knowledge within and about itself in various textual and graphical forms: DocBook, Rich Text, SVG, GIF, JPG, PDF and Postscript; UML diagrams; state-transition diagrams; network graphs; inheritance trees and PERT charts.
- PyOKBC — A Python implementation of the *Open KnowledgeBase Connectivity* system of knowledge representation and abstraction. It was designed to provide a single consistent interface to diverse structured information sources, to include ontologies, relational databases, xml documents, and topic maps.
- PyRETS — An implementation of the *Real Estate Transaction System* for keeping the Vancouver Real Estate Board synchronized with MLS.ca
- CatPub — A database publishing technology consisting of a Postscript templating system over a relational database back-end. Suitable for automatically preparing complex, highly customized, Postscript and PDF publications such as directories and catalogs, it is closed source software created under contract for a firm providing publishing services to the real estate industry. It is producing on the order of 10 thousand unique catalog pages every day containing constantly changing data for the largest real estate boards in Western Canada.
- TKQ2.0 — A Django e-store system vending e-books for hundreds of educational publishers, through a dozen store-fronts, with sophisticated features such as promotions, steganographic watermarking in PDF, bundling, coupons and more.
- TKQW — A Medusa-based "digital drop-shipping" system enabling digital goods sale and delivery by untrusted 3rd parties.
- ModelViz — Added dynamic SVG-based touring facilities to this Django model entity-relationship visualizer.
- Alberta Lodging Association — A Django-based lodgings database backing a web site, a printed directory and an associated advertising sales and layout system.

Founder, Chairman and VP, R&D   Emergence by Design, Inc.
Oct 1995 to Jan 2003   Edmonton, AB

Shawn founded Emergence by Design along with four colleagues to pursue the development of *The Idea Engine*. To fund the ongoing development of TIE, EbD became a dot-com factory, providing consulting, development, hosting and ecommerce services to new dot-com ventures. Shawn was VP of R&D, lead developer and chief architect of this 15-person organization, until selling his interest in 2003.

- TheIdeaEngine — architect and lead developer of this R&D project developing a distributed knowledge representation system using Java (and JDBC), Perl (and DBI), Scheme, and various SQL backends. The effort included the implementation of the OKBC (Open Knowledge Base Connectivity) specification in Java and Perl, the authoring of a multithreaded knowledge server and the creation of many perl CGIs, Java Applets and Applications.

- GetCited.org — chief architect and lead developer on this massive, highly abstracted academic bibliographic portal system featuring:

  - reference and citation cross-references
  - per-publication discussion forums
  - curriculum vitae management
  - links with Amazon and other vendors for associate referral income
  - seeded with MARC Book and Serials databases from Library of Congress
  - rich array of publication types (proceedings, books, articles, manuscripts, bibliographies, etc)
  - tracking of individual/institutional affiliations
  - sophisticated statistics on publishing influence of nations, institutions and individuals based on citation counts

- DedicatedTeacher.com — architect and lead developer for this large, highly abstracted ecommerce engine featuring:

  - sells both 'digital-goods' (eg. MP3s and PDFs of books) and 'tangible goods' (printed books, CDs, educational kits)
  - complex shipping options
  - multiple suppliers per store
  - sophisticated coupon, bundle, sale and promotion features
  - serves store fronts for various companies (e.g. Scholastic)
  - supports multiple currencies, multiple credit-card transaction backends simultaneously and selectively (depending on currency, card-type, availability, etc.)

- Law Opinion — architect and developer of the worlds first E-Commerce facility for the provision of paid legal opinions. It included numerous encryption safeguards to ensure complete client confidentiality; a system for letting people pick the nearest lawyer with experience in the chosen area of the law; and a sophisticated, dynamic, system for performing branching automated interviews.

- FindAMentor.com — architect and lead developer of this system for helping people find and interact with mentors in various areas of their lives; complete with anonymization and multiple personal profiles in different areas of interest

- EmailDirector — architect and developer of this web-based school management system with parallel web and email interfaces and sophisticated email transaction system for, at that time, Canada's largest e-school with 2500 grade-school students

- EStore — architect and developer of this web interface for creating E-Commerce websites using NGage Electronic Commerce technology

- recruiter matchmaking system — salvaged, re-architected and built out a headhunting firm's matchmaking system for staffing high-tech jobs based on skill, locality and position type

- ClickTrace — architect and developer of this web log mining facility
- Domainatrix — architect and developer of this toolset for bulk management of domain registrations, DNS configurations and network interface configuration
- Edmonton Chamber of Commerce Annual Directory — architect of this database-driven directory including ads and equivalents of white pages and yellow pages
- magazine publishing system — architect of this complete publishing solution with extensive features for advertising sales management and ad layout automation

Systems Analyst   Gov't of Alberta
1990 to 1995   Edmonton, AB
This progressively more challenging position with the Animal Health Laboratories Branch included duties such as:
- Analysis, design, programming, training and support of LABBASE: a multi-disciplinary LIMS (Laboratory Information Management System). The system was coded in Paradox and WordBasic and interacted with the legacy AS/400 database.
- Specification, design, implementation and operation of Token Ring LAN with approx. 20 workstations, an OS/2 LAN Server and an AS/400.
- Maintenance programming on the AS/400 in RGP/400 and CL.
- Strategic planning and technology assessment for the branch
- Management of two programmers, the AS/400 administrator and a tech support person.
- Specification of customizable accounting package and management of vendor compliance
- Developed software to track and order laboratory supplies.

Principal   Sapient Systems
1990 to 1995   Edmonton, AB
Sapient Systems specialized in the creation of desktop database apps.
- Wrote *FastEDI* in PAL (the Paradox Application Language) to provide a subset of the ANSI X.12 (V3.020) Electronic Data Interchange system for an oilfield supply company interested in easing the ordering process for the many regional offices of their large clients in the oil patch. *FastEDI v1.0* implemented the transaction sets for Price/Sales Catalog (832) and Purchase Order (850) thus enabling the electronic distribution of the latest pricelist and placement of orders.
- Created a *Disability Inventory & Assessment System* for an Educational Consultant to use as a proof of concept of her doctoral work for possible productization.
- Created a *Property Management System* for a Realty Firm to track the features, locations, prices and owners of available commercial real estate to facilitate showing to clients
- Attended "NeXT Developer Camp" and wrote *Elements.app*

Executive Director   TechnoWatch Society
1990 to 1992   Edmonton, AB
Founded and managed this non-profit think tank, research and educational organization, put on presentations, guided staff conducting a scientific literature research project, and handled all financial & administrative work.

Partner   Real Time Solutions
1989 to 1990   Edmonton, AB
Various programming, consulting and training projects

Interests:
- A-Life
- Emergence
- Game Theory
- Nanotech

- Agorics
- Evolution
- GroupWare
- Noosphere

- Autopoesis
- Planetworking
- ISO-9000
- Singularity

- Design Patterns
- Quantified Self
- Markets
- Wearables