

FORMAL EDUCATION

Carleton University
Ottawa, Ontario, Canada

Masters Degree, 2005
Geography and Environmental Studies
Thesis: *Geospatial Web Services: An Evolution of Geospatial Data Infrastructure.*

Algonquin College
Ottawa, Ontario, Canada

Graduate Diploma, 2000
Geographic Information Systems

York University
Toronto, Ontario, Canada

Bachelors Degree, 1996
Geography and Environmental Studies

PROFESSIONAL TRAINING AND CERTIFICATIONS

- Spatial Data Infrastructure
- Web Mapping and Distributed Geospatial Computing
- Metadata Standards, Development and Implementation
- Unix Systems / Programming, Tools and Utilities
- Perl / CGI / Web Development
- Java Development
- ANSI-C Development
- Oracle 8i / PL/SQL Development
- Technical / Scientific Writing and Documentation
- Unified Modelling Language (UML)

SKILLS AND COMPETENCIES

Systems / Web Development:

Systems: Web Service Architectures, Spatial Data Infrastructures

Web Services / Development: XML, XML Schema, XSLT, WSDL, HTML, CSS, JavaScript, Java, J2EE (servlets, JSP, JSTL)

Languages: Python, Perl, C, C++, Java, PHP, UNIX shells, SQL, version management (CVS, Subversion)

Databases: Oracle, PostgreSQL, MySQL, MS Access, SQLite

Design: UML, XMI, MVC, System / database design

Geospatial

Standards: knowledge, development, implementation and training delivery of OGC / ISO TC 211 specifications for metadata, web services, web mapping, data encoding, at Canadian and International levels

Technology: Development and custom solutions using commercial and open source toolsets and libraries, for web and other environments

Approaches: Data modelling, integration, formatting, standards-based metadata creation, image processing, geometric correction, advanced analysis (network, indexing, interpolation, etc.)

Computer Systems and software: UNIX, Linux, Windows

Project Management / teamwork: Leading multi-agency / stakeholder projects and initiatives; working with industry, academia and government on collaborative projects and programs; coordinating workshops, meetings

Presentation Skills: developing and presenting materials of approaches, standards and analysis to senior management, stakeholders, working groups (both technical and managerial levels) and for general public consumption

Linguistic Profiles: Fluent in English and Greek; basic (AAA) French

Reliability and Security: SECRET

PROFESSIONAL EMPLOYMENT HISTORY

Senior Systems Scientist

Environment Canada

Toronto, Ontario, Canada, 2003 – present

Geospatial Coordination Office, Information Management (October 2008 - present)

- Specialist / expert for web services, metadata, cataloguing, web mapping and infrastructure / architecture in support of departmental mandates / operations
- Developing Departmental strategies
 - o Geospatial Data Dissemination
 - o Geospatial Data Discovery
 - o Geospatial Community of Practice Web Presence
- Providing leadership and direction for development of approaches to exposing environmental information holdings through standards based (OGC, ISO, W3C) approaches and services
- Developing linkages with other information systems and other organizations and initiatives (NFIS, CGDI, LIO, NLWIS)
- Lead Developer of the OGC Web Map Context Specification (<http://www.opengeospatial.org/standards/wmc>)
- Departmental lead / representative for
 - o CGDI Architecture Advisory Committee
 - o Canadian Advisory Board to ISO Technical Committee 211
 - o OGC Technical Committee

- Web Mapping
- Catalogue and Discovery
- SensorWeb Enablement

ResEau Water Portal (March 2005 – October 2008)

- Lead Technical Architect to develop standards based water portal for Canada's landmass
- Providing technical guidance and leadership on systems development and adoption and evolution of standards
- Development of innovative solutions for service delivery
 - GeoRSS
 - OGC SensorWeb
 - Web Services Catalogs
 - Website: <http://www.environmentandresources.ca/reseau/>
 - OGC Website of the Month (June 2006)
 - Geospatial Solutions Article (<http://www.gpsworld.com/gis/integration-and-standards/building-connections-between-canada039s-water-data-7451>)

Envirodat / Water Quality Index Calculator (Oct 2003 – June 2004)

- Reengineering of existing web services for discovery, access and visualization of water quality monitoring stations
- Recast with standards-based approaches (OGC Web Services)
 - Linkages to FGDC metadata
 - Linkages to existing water quality calculators
- Scientific authority for procurement and requirements specification for deployment of standards-based sensor collection service (OGC SCS)
- Design of national architecture / infrastructure and connectivity to achieve departmental interoperability for water quality sensors and platforms

CISEViewer (December 2003 – April 2004)

- Lead technical architect for deployment of standards-based web mapping application in alignment with branch vision and direction for information services
- First departmental online web mapping tool to exemplify and showcase interoperability of environmental / spatial information

CGDI Technical Training Manual (December 2003 – April 2004)

- Lead subject matter specialist chosen for content input and advisory in delivery of a national training module / guide
 - Led Web Mapping Module
 - Advisory on other modules
- Available at:
 - http://www.geoconnections.org/publications/Technical_Manual/html_e/cgdiindex.html

- http://www.geoconnections.org/publications/training_manual/e/06/06_00/06_00_00.htm

Environment Canada Watershed Lookup Service (November 2003)

- Lead developer, in collaboration with data partners, of an innovative Watershed Lookup service, based on standards based access and web services approaches
- Collaboration with and feedback from federal partners in developing service operations and descriptions
- Content model design and development implemented with W3C XML Schema
- Encoded using OGC GML 3.0.0
 - <http://devgeo.cciw.ca/watershed/index.html>

ECMeta Spatial Components Integration (October 2003)

- Lead designer, developer of integration of spatial functionality for ECMeta metadata management tool
- Implemented using J2EE framework model

Senior Technical Advisor

GeoConnections, Natural Resources Canada

Toronto, Ontario, Canada, July 2008 – March 2010

- Provided expert subject matter expertise, research and development, demonstrations and requirements to the development of the 4th generation GeoConnections Discovery Portal (GDP), Canada's national geospatial clearinghouse of millions of geospatial products, as well as the ESS One Stop Geoportal, a Sector level geospatial portal / system
- Development of the CGDI WMS profile 1.1, a profile to enhance interoperability in Canada for WMS providers
- Development of the CGDI KML Best Practices Guide, a guideline on enhancing geospatial data use with KML in Canada for geospatial data providers
- Various expert support on geospatial standards, architecture, infrastructure, and systems

Independent Consultant

Property Research Associates LLC

Brooklyn, New York, United States of America (April 2005)

- Research and Development of Mapping and Geospatial
- Technical development for value added property information website (<http://www.propertyshark.com/>) for selected markets in the US
- Development of map system infrastructure using supporting open source GIS toolkits

Paul Fiorini

Toronto, Ontario, Canada (January 2006)

- Website setup, development and maintenance for (<http://www.paulfiorini.com/>) in support of providing training for education professionals throughout Ontario
- Online administrative functionality for class listing and scheduling, statistics

Systems Scientist

**Canada Centre for Remote Sensing, Natural Resources Canada
Ottawa, Ontario, Canada, 1998 – 2004**

OGC / International Specification Development (April 2002 – June 2003)

- Representing GeoConnections / Natural Resources Canada
- Lead contributor to multi-agency, international collaboration and development (NASA, NOAA, CCRS, SCO) of “Web Map Context Documents” Implementation Specification
- Development and implementation of software to support specification
- Officially adopted OGC implementation specification (June 2003)
- Adopted by numerous organizations into commercial software distributions
- Press releases:
 - o <http://www.opengeospatial.org/pressroom/pressreleases/367>
 - o <http://www.geoconnections.org/CGDI.cfm/fuseaction/newsEvents.s ee/id/526/gcs.cfm>
- Specification: <http://www.opengeospatial.org/standards/wmc>

CGDI WMS Client Component [CWC2] (May 2002 – September 2003)

- Scientific and Technical Authority for RFP development and process for CWC2 (\$250K)
- Development of requirements to develop a web based mapping client for use by GeoConnections CGDI / partners and stakeholders as a remote service (API)
- Lead coordination of project with multiple stakeholder requirements and input (NRCan/CTI Sherbrooke, NRCan/Canadian Forest Service, Agriculture Canada)
- Lead coordination of RFP evaluation and contract award
- Released to open source community at:
<http://www.maptools.org/chameleon/>

owsview (November 2001 – present)

- Application development to exemplify feasibility and potential of endorsed technologies of the Canadian Geospatial Data Infrastructure (CGDI) and Open Geospatial Consortium (OGC)
- Web-based interfaces combined with server side middleware to process XML based web services
- Used as demonstrative application for CGDI stakeholder and outreach meetings and presentations
- Featured demonstration / application of the OGC
- <http://devgeo.cciw.ca/owsview/>

CGDI Gazetteer Service (October 2001 – April 2003)

- Lead developer, in collaboration with data partners, of an innovative gazetteer service, based on standard access and web services approaches, which extends traditional gazetteer services with the use of standards-based technology
- Collaboration with and feedback from federal and provincial partners in developing service operations and descriptions
- Collaboration with international partners for unified Gazetteer Service specification adhering to OGC / ISO standards
- Content model design and development implemented with W3C XML Schema
- <http://cgdi-dev.geoconnections.org/prototypes/cgdigaz/>

CGDI Postal Code Lookup Service (April 2003)

- Lead developer, in collaboration with data partners, of an innovative postal code lookup service, based on standard access and web services approaches
- Collaboration with and feedback from federal and provincial partners in developing service operations and descriptions
- Content model design and development implemented with W3C XML Schema
- <http://geoservices.cgdi.ca/postalcode/>

Canadian Information System for the Environment (CISE) / CGDI Web Mapping and Services Workshop (December 2002)

- Coordination support and delivery of 2-day workshop of CGDI endorsed geospatial standards to ~100 delegates, in support of standards-based delivery of geospatial information holdings for the CISE program and outputs, in concert with the CGDI
 - o Management overview and demonstration
 - o Hands-on technical level implementation workshop

Architectural Support and Technology Advisory (April 2001 – October 2003)

- OGC technical liaison and point of contact for GeoConnections program
- Collaboration with government, industry and academia to develop specifications for geospatial information and services, in support of Access activities of GeoConnections program
- Advisory and recommendations on standards based web visualization, access and discovery and associated information management approaches of GIS / geospatial data and services for various projects and initiatives within the GeoConnections program and other federal organizations:
 - o CGDI Development Network (<http://cgdi-dev.geoconnections.org/>)
 - o OGC Critical Infrastructure Protection Initiative (CIPI)
 - o OGC Web Services Initiative (OWS)
 - o GeoBase Portal (<http://www.geobase.ca/>)
 - o NRCan National Air Photo Library (NAPL)

- GeoConnections Discovery Portal integration of OGC services (<http://geodiscover.cgdi.ca/>)
- Environment Canada (CISE) geospatial web services enablement
- Statistics Canada geospatial web services enablement
- Development and presentation of numerous materials (presentations, technical documentation, analysis, manuals, etc.) for stakeholders and partners within the GeoConnections initiative regarding the Canadian Geospatial Data Infrastructure, geospatial web services, and associated issues

Committee on Earth Observation Satellites (CEOS) Portal for Geographic Infrastructure for Sustainable Development (GISD) (May 2002 – September 2002)

- CCRS Co-representative
- Organizational lead for website / portal development for Geographic Infrastructure for Sustainable Development (GISD) initiative
- Collaboration with CEOS partners (European Space Agency, NASA, NASDA, USGS) for development of demonstration and presentation material
- Viewer client contributed / developed for visualization of information holdings of CEOS partners
- Displayed and presented at World Summit on Sustainable Development (WSSD), August 2002, Johannesburg, South Africa
- <http://wgiss.ceos.org/gisd/>

GeoGratis (April 2001 – October 2003)

- Development of software and procedures for publishing of geospatial data and services free of charge to <http://geogratias.gc.ca/>, using standards-based approaches and methodologies
- Development of operational procedures to publish Landsat 7 Orthorectified Imagery product collection (data processing, metadata, discovery, visualization and access, and download service)

CCRS Spatial Data Warehouse (April 2001 – October 2003)

- Responsible for coordination and maintenance of Open Geospatial Consortium compliant (OGC) Web Map Service (WMS) and Web Feature Service (WFS), consisting of GeoGratis and CCRS product collections (imagery and vector), as an innovative web based visualization technology and approach
- Responsible for web site development, maintenance and statistics
- Responsible for metadata development and maintenance of geospatial data from multiple domains (Environmental, Forestry, Political, Imagery)

ENVISAT Ground Segment Upgrade (Sept 2000 - March 2001)

- Responsible for definition, development, software algorithms, testing and validation of ENVISAT ASAR Level 0 imagery products
- Integration into CCRS Generic Transcription System (GTS)

- Acceptance and validation with European Space Agency (ESA) ENVISAT product specification

Ground Control Database (GCDB) (March 1999 - September 2000)

- Design, development, implementation and acceptance of Ground Control Database (GCDB) aerial photo imagery, FGDC collection and product level metadata and web based visualization and access / download interface, consisting of over 37000 products of the Canadian landmass
- Implementation, supervision and validation of operational procedures for lab operators; assisting section head in selection and development process
- Development of partnerships with external industries and federal / provincial governments for data acquisition and services
- Scientific RFP authority for scanning services contract (\$150K)
- Ongoing consultative and advisory / end user support

Generic Transcription System (May 1999 - November 1999)

- Development of procedures and tools to create product metadata from LANDSAT and SPOT catalogues for attribute data analysis
- Development of procedures and tools for validation of SPOT 2, 3, 4 imagery as Framed Raw Expanded Data (FRED) imagery
- <http://pubs.nrc-cnrc.gc.ca/cjrs/cjrs28/m02-005.pdf>

Canadian Earth Observation Desktop Ground Control Point Pass Processor [CEODesk] (Jan 1998 – April 1999)

- Development of procedures to geometrically correct earth observation satellite imagery (LANDSAT 5/ SPOT 2,3,4) using corrected aerial imagery
- Support in system testing and acceptance

CONTRIBUTIONS

- Volunteer developer for the Hurricane Katrina GIS support project to deliver online systems of high resolution aerial photo imagery for Internet dissemination using open source tools
<http://www.directionsmag.com/articles/katrina-imagery-warehouse-the-inside-story/123299>
- Developer and maintainer of “MapServer OGC Web Services Workshop” training material <http://ms-ogc-workshop.maptools.org/>
- Official subject matter specialist for Web Mapping for CGDI Technical Manual and Online courseware
- Official subject matter reviewer for O’Reilly “Web Mapping Illustrated: Using Open Source GIS Toolkits”
- Contributor to numerous geospatial open source software and tools in support of web development, geographic information systems, data, services and Internet visualization to GIS and Web Services Development communities (perl.com, ArcScripts on esri.com, UMN MapServer, Community Mapbuilder, Chameleon)
- Founder of pycsw (<http://pycsw.org/>) an OGC CSW server implementation written in Python

- Developer / committer on MapServer (<http://www.mapserver.org/>), OWSLib (<http://trac.gispython.org/lab/wiki/OwsLib>) and Mapbuilder (<http://www.communitymapbuilder.org/>) projects
- Contributor of online GIS / remote sensing projects, papers and educational materials <http://www.kralidis.ca/gis/>

SELECTED PAPERS / PUBLICATIONS / ACKNOWLEDGEMENTS

Kralidis, T, “Geospatial Open Source and Open Standards Convergences”, in Hall, G.B. and Leahy, M.G., “Open Source Approaches to Spatial Data Handling”. London, Springer-London, 2008
<<http://www.springer.com/geography/gis+cartography/book/978-3-540-74830-4>>

Kralidis, T, “Geospatial Web Services: The Evolution of Geospatial Data Infrastructure”, in Scharl and Tochtermann, “The Geospatial Web: How Geo-Browsers, Social Software and the Web 2,0 are Shaping the Network Society (Advanced Information and Knowledge Processing)”. London, Springer-London, 2007 <<http://www.amazon.com/dp/1846288266/>>

Kralidis, T, “Earthquake Mapping with OGC and Open Source Tools”, gisuser.com, May 2005; <<http://www.gisuser.com/content/view/5603/28/>>

Kralidis, T, “Geospatial Web Services: An Evolution of Geospatial Data Infrastructure”, Masters Thesis, Carleton University, 2005 <<http://www.kralidis.ca/gis/masters/thesis/index.html> >

Natural Resources Canada: Earth Sciences Sector Merit Award: in recognition for outstanding team contribution to the development and leadership of the CGDI Development Network (November 2004)

Open Geospatial Consortium (Kralidis, T – lead contributor), “Web Map Context Documents Implementation Specification, June 2003; <<http://www.opengeospatial.org/standards/wmc>>

Kralidis, T, “Web Mapping Services”, Canadian Geospatial Data Infrastructure Technical Manual (Chapter 4), June 2001; <http://geoconnections.org/english/technical/html/Chapter_4.html#4.0>

Kralidis, T, “GIS Potential Through Metadata and Access Protocol”, spatialnews.com / geocommunity.com, September 2000; <<http://spatialnews.geocomm.com/features/tk/metadata.html>>

MEMBERSHIPS / ASSOCIATIONS

- Open Source Geospatial Foundation Charter Member
- Reviewer for International Journal of Geographical Information Science
- GISuser contributing editor

- Spatial News / GeoCommunity contributing editor
- Canadian Institute of Geomatics
- Canadian Association of Geographers
- Canadian Aeronautics and Space Institute
- Canadian Remote Sensing Society
- York University Alumni Association Ottawa Branch
- York University Geography Alumni Association

OTHER INTERESTS

travelling, reading, ice hockey, tennis, jogging

REFERENCES

Available upon request