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SUMMARY

Independent Consultant – provide services for data evaluation and consolidation, workflow development, database design, web programming, web GIS development, technical writing, and training.

Author – wrote and self-published the *Mapping with MicroStation* series of five books and authored many technical articles on GIS & programming (see page 3); currently working on a *Web GIS Development* text and web site (webGISdev.com).

Geomatics Professor at Sir Sandford Fleming College – design, develop, and deliver courses on project planning and management, municipal GIS, database design and development, problem solving, web programming, and web GIS development.

FORMAL EDUCATION

1983 – 1987 **Honours Bachelor of Science, Computer Science**
McMASTER UNIVERSITY, Hamilton, Ontario
• four-year program with emphasis on computer science theory and software engineering

1974 – 1977 **Thematic Cartographic Technology Diploma**
SIR SANDFORD FLEMING COLLEGE, Lindsay, Ontario
• three-year college course of study that focused on visual communication, cartographic principles, spatial data processing, and the design and production of maps and graphics

EMPLOYMENT EXPERIENCE

1995 – Present GEODATA RESOURCES INCORPORATED, Lakefield, Ontario
Technical Consultant, various GIS/mapping projects and training workshops (see page 2)

1987 – Present SIR SANDFORD FLEMING COLLEGE
School of Environmental and Natural Resource Sciences, Lindsay, Ontario
Professor, Geomatics department (1987–present)
• design and delivery of courses to post-secondary and post-diploma students
Co-ordinator, Cartography & GIS Mapping Specialist programs (1993–1995, 1999–2001)
• responsible for promotion, operation, and refinement of three programs
• development of Geomatics Technician and two GIS Specialist post-diploma programs
Web Developer, Geomatics Community: www.GeoCommunity.net (2003–present)
• designed and built web-database system for students and alumni as sabbatical project
• includes job board, co-op projects, message center, industry contacts, and alumni info

1977 – 1987 CANADIAN HYDROGRAPHIC SERVICE
Fisheries and Oceans Canada, Burlington, Ontario
Marine Cartographer
• compilation and drafting of nautical charts using manual and automated methods
• utilization and testing of Computer-assisted Cartography system
• development of computer programs to automate drafting tasks
• revision and production of the Ontario Small Craft Harbours Guide

MAJOR PROJECTS

New University City, Kuwait – GIS Development, 2004 – 2005

- subcontractor with Canadian Consortium Architects and Smart Operating Solutions
- develop initial GIS implementation plan for new university site

County of Haliburton – GIS Development and Implementation, 2004 – 2005

- build a web-based systems to provide GIS data and functionality to staff and general public
- consolidate spatial and attribute data from Bell Canada 911, Ministry of Natural Resources (MNR), Municipal Property Assessment Corporation (MPAC), Teranet Land Services Inc, and local sources
- design and produce 400–page full-colour street atlas for emergency response and public use

City of Kawartha Lakes – GIS Data Consolidation, 2003 – 2004

- contract with Environmental Services to integrate spatial and attribute data from City, Bell, MNR
- build comprehensive street network dataset and functionality for City's web-based GIS system

County of Peterborough – GIS Development and Implementation, 2000 – 2003

- move County from paper-based mapping to GIS and web-based GIS systems (see attachment)
- process and integrate mapping data from Bell, MNR, various townships and consultants
- develop web-based GIS system used by staff in various departments and township offices
- include proposal preparation for GeoSmart/Connect Ontario funding with broad community group

Bentley Systems – Curriculum Development, Documentation & Training, 1995 – 2003

- develop the *Applying MicroStation GeoGraphics* course curriculum; create accompanying dataset with cadastral, utilities, transportation, and environmental themes; update for fourth edition
- develop the *MicroStation GeoGraphics Training Guide* with Lance Goode of Bentley Systems
- review documentation for selected chapters in the *MicroStation GeoGraphics User's Guide*
- conduct GeoGraphics instructor certification courses in Exton PA, Dallas, Atlanta, and Chicago

Intergraph Canada – Application and Workflow Development, 1995 – 1998

- participate with small project team in development using GeoMedia and Visual Basic of Teramap v3 application for real estate lawyers and clerks to access remote POLARIS land titles database
- develop detailed workflow and creation of prototype Property Index Maps for Teranet
- assist with Arc/Info to MGE translation for Ontario Ministry of Northern Development and Mines
- install and configure Oracle database for Nova Scotia Department of Transport

Peterborough Fire Dept – Computer Aided Dispatch Implementation, 1995 – 1999

- contract with the City of Peterborough (Fire Dept.) to evaluate data and establish requirements
- manage preparation and conversion of graphics data for vendor-specific CAD system
- generate street segment database from map graphics, automated with custom macros and queries

City of Peterborough and Peterborough Utilities Commission, 1993 – 1996

- Street Light Inventory Project – contract with the City of Peterborough (Engineering Dept, 1993)
- Fire Hydrant Proximity Project – contract with the City of Peterborough (Fire Dept, 1994)
- Water Service Records Automation program – contract with Utilities Comm. (Engineering Dept, 1996)

Work Term in Malta, GIS Development and Training, 1990

- sponsored by the Maltese Ministry of Education and Ministry of the Infrastructure
- participate in initial GIS development for Malta, organize Georeferenced Data Study, establish Pilot Project based on capital city, and present seminars to government and university staff

County of Peterborough – Heuristic Routing for Waste Collection, 1989 – 1990

- contract with Peterborough County for digital mapping & routing for "Blue Box" Recycling Program
- develop efficient weekly pick-up routes for 10,000 households within nine municipalities

Other Consulting Projects & Services, 1995 – Present

- conduct workshops/courses and provide support/programming for various organizations including:
Ontario: Bell Ontario, City of Brampton, City of Mississauga, City of Richmond Hill, City of Toronto, City of Windsor, Collingwood PUC, Geomatics International, Greater Toronto Airports Authority, Lindsay Hydro, Northumberland County, PUC Barrie, Sudbury Hydro, TerraSurveys Ltd, Zenon International
Outside Ontario: Army Corps of Engineers (AL), AT&T (NJ), Edwards & Kelcey Engineers (IL), Integrated Mapping Services (NH), North Carolina DOT, Rand-McNally (IL), Saevfors Consulting (Sweden)

PRESENTATIONS

Canadian Cartographic Association Conference – *Cartographic Design for Web GIS*: Lindsay ON, 2004

Ontario Professional Planners Institute – *Web GIS for Rural Municipalities*: London ON, 2002

Bentley International Users Conference – *Implementing GIS Projects*, Philadelphia PA, Sep 1998, 2000

Bentley Forums – *various GIS/mapping topics*: Toronto ON (2002, 2001, 1998), Austin TX, San Jose CA, Baltimore MD, Toronto ON, Indianapolis IN, Atlanta GA (1997), Detroit MI, Orlando FL (1996)

URISA Conference – *Building a Multi-discipline GIS*: Toronto ON, 1997

Wisconsin User's Group Conference – *Combining Database & Map Data*: Madison WI, 1996

AEC Systems Conference – *Applying MicroStation for GIS Projects*: Anaheim CA, 1996

WEBSITES

Web GIS Development, www.webGISdev.com, 2000 – Present

- teaching and learning resources for web GIS and related technologies such as HTML, JavaScript, ColdFusion, and Autodesk MapGuide (new material on PHP and MapServer to be added soon)

Geomatics Community at Fleming, www.GeoCommunity.net, 2003 – Present

- web-database site for Fleming students and alumni to advertise employment opportunities, promote GIS Co-op Projects, and to help graduates stay in touch with each other and the college

PUBLICATIONS

Mapping with MicroStation, 1994 – 2004

- self-published text books and learner's guides used by students and practitioners for GIS/mapping projects across Canada, throughout the United States, and in over 20 countries around the world.
- **Volume I: Foundation** – learn and use MicroStation for GIS/mapping projects; covers all relevant two-dimensional features (500 pages, 4th edition, Nov 2002)
- **Volume II: AM/FM Systems** – learn how MicroStation's database interface can be put to work by building an small AM/FM system (200 pages, Jan 1996)
- **Volume III: Technical Tools** – learn about the internal file format of MicroStation design files and how to use the EdG non-graphic editor (150 pages, Jan 1997)
- **Volume IV: Macro Programming** – learn and use MicroStation's BASIC language to develop macros for GIS/mapping tasks (300 pages, 2nd edition, Sep 2000)
- **Volume V: GIS Applications** – learn how to set-up and use MicroStation GeoGraphics in a series of hands-on exercises with a simple dataset (200 pages, 3rd edition, Mar 2001)

Applying MicroStation GeoGraphics, Mar 1997 – Feb 2003, four editions (300 pages)

- course curriculum developed for and published by the Bentley Institute, consisting of comprehensive student and teacher course guides, extensive municipal GIS datasets, and assorted teacher aids

Articles published in *MicroStation Manager* and related magazines, 1995 – 2000

- Building GIS Data with MicroStation Basic, three-part series, Sep – Dec 2000
- Accessing Databases with MicroStation Basic, four-part series, Jan – Apr 1999
- Processing Design Files with Macros, four-part series, Jun – Sep 1998
- Macros for Mapping, Mar 1998
- GeoGraphically Speaking, four-part series, Dec 1996 – Mar 1997
- The Planning of Mapping Projects, Nov 1995

Integration of Municipal GIS with Local Utility Systems, 1992

- design of training curriculum and preparation of learner's guide (240 pages with appendices)
- included development of a functional sample GIS project for municipal utilities
- with S. Seabrook, M. Maclean, & R. Sevigny, sponsored by the Ontario Ministry of Skills Development

3D Modeling of Hydrographic Data, 1987

- McMaster University undergraduate thesis (approx. 500 pages with appendices), with D.M. Goslan
- research and development; creation of software system (5,500 lines of C code) to translate digital hydrographic data into a three-dimensional image for use in interactive data compilation

TEACHING SPECIALITIES

Project Planning and Management, 2005 – Present

- instruction in project planning, proposal writing, and project management
- include components such as work breakdown structure, Gantt charts, network diagrams
- administration of GIS co-operative projects for students, clients, and faculty advisors

Web Programming and Web GIS Development, 1999 – Present

- web basics such as client-server architecture, Internet protocols, HTML & CSS coding
- JavaScript programming to add functionality and customize web GIS projects
- use of ColdFusion and PHP for dynamic database interaction and processing
- web GIS implementation using AutoDesk MapGuide, ESRI ArcIMS, GeoMedia WebMap, MapServer

Database Design and Development, 1994 – Present

- application of database theory for conceptual, logical, and physical data modelling
- fundamental principles of database processing and management in a GIS context
- work with Microsoft Access and SQL Server, and Oracle
- coverage of the Structured Query Language, Transact SQL, and PL/SQL

Problem Solving and Programming, 1986 – Present

- instruction and use of C, Basic, Visual Basic, and VB.NET languages
- focus on problem analysis, algorithm design, and structured programming
- developed in-house Graphic Input File (GIF) format to store vector images in text files

GIS/Mapping Software, 1988 – 2003

- in-depth treatment of MicroStation fundamentals and advanced topics such as Database Interfaces, Basic Programming, and GeoGraphics (GIS)
- design and supervision of several award-winning student projects
- manager and key instructor of authorized MicroStation Training Centre, 1990 – 1992
- Independent Certified Instructor and curriculum developer with the Bentley Institute

AWARDS

Pascal Award for Teaching Excellence, Sir Sandford Fleming College

- four nominations between 1989 – 2002

Golden Mouse Award, International Intergraph User's Group, 1995

- for *Vermont Tourist Map*, produced with A. Evers, C. Waugh, C. den Ouden, D.J. Opie

Dean's Honour List, McMaster University, 1984 & 1986

- graduated with First Class Standing, 1987

President's Prize, Canadian Cartographic Association, 1978 (first award to a Fleming student)

- for research, design, and production of multi-colour thematic map:
Land Use and Population Density within the City of Peterborough

AFFILIATIONS

- URISA (Urban and Regional Information Systems Association)
- Canadian Cartographic Association
- Sir Sandford Fleming College Council, 1992–1994, Faculty Representative