Bruce Spencer

52 Anderson Street,
Fredericton, New Brunswick,
Canada, E3B 7E1
(home) 506-457-6309

brucespencer.ca@gmail.com
http://www.cs.unb.ca/~bspencer
http://linkedin.com/in/brucespencerca
Twitter @BruceSpencerCa

Objective

- Seeks challenging research and development opportunity to develop groundbreaking statistical modeling tools that employ big data to solve real world problems using predictive analytics.

Highlights

- 35 years experience in Research and Development, publishing scientific literature, mentoring, project management, administration, and teaching
- Directly led 61 staff over 7 successful information technology R&D projects total worth $9M, with small, medium and large firms including Bell Canada, Agfa Healthcare, Kibboko.
- Leveraged 5x funding for partners from CANARIE and Growthworks.
- Networked with government research labs NRC, IRAP, ACOA, NSERC, MITACS, and CANARIE.
- Strong development skills for web, SAAS, statistical modeling, R, java.
- Dissemination 75 papers, 40 talks, 50 courses. Highly qualified personnel (17Masters, 5 Ph.D.)

Expertise

Automated Reasoning	Electronic Commerce	Artificial Intelligence	Mentoring
Description Logic	Social Networks Analysis	Machine Learning	Networking
Semantic Web	Service-oriented Architectures	Data Mining	Project Management
		Predictive Analytics	

Professional Experience

IPSNP Technology — **Saint John and Fredericton, NB**

Senior Consultant (July 2016 – Present)

- Designed and developed a federated open data solution for precision agriculture and nutrition.

Energy Research (Indepent) — **Fredericton, NB**

Oct 2016– Present

- Developed temperature forecasting technology, publications in journals and conferences.

Fiddlehead Technology — **Moncton and Fredericton, NB**

Lead Data Scientist (April 2014 – Oct 2015)

- Designed and developed demand forecast system for frozen food using predictive analytics
- Improved forecasting by using non-linear solver to tune time series models

UNB Faculty of Computer Science — **Fredericton, NB**

Senior Research Scientist and Lecturer (Sept 2013 – April 2014)

- Designed, implemented visualization showing Twitter data by topic on map
- Created, taught Social Network Analyses course, collaboration with Faculty of Business, NRC

Introhive — **Fredericton, NB**

Research and Architecture Team Lead (Feb – August 2013)

- Co-developed technology to arrange meetings through contacts
- Acquired funding for advanced analytics project

National Research Council of Canada, Institute for Information Technology — **Fredericton, NB**

Senior Research Officer (Sept 2001– Feb 2013)

- Founded and led the Internet Logic group, and led the following projects:
- **2009-12** Radiation Exposure Monitoring and dose registry project monitors ionizing radiation from diagnostic tests, profiles dose history, assesses patient risk, classifies rare and high doses, assesses guideline compliance, analyzes textual reports. 30 months, $4M.

Tasks: Led 34 NRC staff. Procured and managed staff, analyzed customer requirements, sole creator of initial design, coordinated detailed designs, designed knowledge-based system, designed guideline compliance system, analyzed open source licenses, coordinated all documentation, liaised with client, ethics board, professional healthcare associations and government bodies.
Impact: Allows physicians to assess risk associated with cumulative radiation, draws attention to high and/or rare doses. Agfa converted our prototype to commercial product IMPAX-REM within 8 months.

- **2008-11** Health Services Virtual Organization project provides immersive multisite collaborative medical training. 24 months. NRC rec'd $0.5M of CANARIE $2.0M.
  Tasks: Led 8 NRC staff. Procured and managed staff, analyzed requirements, collaborated on design of underlying SOA system, liaised with client, partners & ethics board, analyzed open source licenses, oversaw lightpath integration, prepared and delivered papers, demos and documentation.
  Partners: Northern Ontario School of Medicine, Communications Research Ctr, McGill Univ, Univ of Wisconsin, consulting companies, four medical schools.
  Impact: Training sessions integrated six sites in Canada, USA, Ireland (82 faculty and students), open source release of code that provides training sessions. Master's thesis.
- **2008-9** Business Domain Ontology Development Framework provides tools to extract business ontology from documents. ACOA $3.6M. NRC under contract.
  Tasks: Led one staff. Created ontology validation prototype for closed-world reasoning.
  Partners: UNB Computer Science with Exigen Corp.
  Impact: Client withdrew. Completed prototype used in Master's and two PhD theses.
- **2007** ReCIRC project recommends promotional material, based on customer intelligence, ratings and behavior, addresses cold start problem, defines and tracks product niches.
  Tasks: Led 5 NRC staff. Procured, educated and managed staff, performed competitive scan, developed original concept, procured initial funding, supervised two Master's theses.
  Impact: 90% prediction accuracy. PinpointSelling, rebranded as Kibboko, adopted our business direction, licensed code, hired students, raised $5M VC, released two online marketing products.
- **2005-7** Eucalyptus project: collaborative participatory design studio, integrates sofware from Autodesk and IBM, videoconferencing over CANARIE's lightpaths. NRC rec'd $0.2M of CANARIE $1.2M.
  Tasks: Led 5 staff. Procured and managed staff, original architecture, prepared publications, demos.
  Partners: Carleton University, Communications Research Ctr.
  Impact: collaborative design studio provided virtual old Montreal to architects. ORION Award. Licensed to Carleton. Code was adopted by our HSVO project.
- **2004-6** inDiscover / inCommune projects provide tools to support independent music industry, helping musicians find fans. NRC rec'd $0.4M and licensing revenue.
  Tasks: Led 8 staff. Hardened initial collaborative filtering prototype to meet client's traffic requirements, generated bilingual version, incorporated fuzzy clustering of fans and crowd sourcing tools for composing playlists, managed development through four releases to client.
  Partners: Bell/Sympatico MSN.
  Impact: inDiscover sponsored the Canadian Independent Music awards, was licensed and run by Bell Canada, now by Orange Records. Also licensed to companies Kibboko and GreenNexxus.

Professor of Computer Science **Fredericton, NB**

Professor (Sept 1990 – Present) Full Professor in 1999. Adjunct professor since 2002.

- Supervised 17 Master's and 5 PhD students, supported by my $226,605 NSERC grants.
- 1991-1993 Contracts with Martin-Marietta $209K and Bell-Northern Research, $30K.

Bell-Northern Research (Nortel) **Ottawa, Ontario**

Bell-Northern Research Computing Technology (August 1983 – August 1986)

- Developed artificial intelligence tools, and BNR LISP and BNR Prolog systems.

University of Waterloo **Waterloo, Ontario**

Teaching and Research Assistant (Sept 1986- August1990, Sept 1981- Dec 1982)

Dalhousie University **Halifax, NS**

Lecturer in Computer Science, Dalhousie (Jan-April 1983)
Research Assistant (May 1980 – Aug 1981)

- Statistical modeling and estimation in climatology, IMSL programming.

Education

1986-90 PhD Waterloo, artificial intelligence, plan recognition, automated reasoning, belief revision.
1981-83 Master's Waterloo, natural language, knowledge representation, logic programming.
1976-80 Bachelor's Dalhousie, mathematics, automated theorem proving.

Professional Development

2014 Data Mining with R (3 days)
2012 Coursera Social Networks Analysis (8 weeks)
2011 SADI: Web Publishing of Scientific Data and Services, semantic web and web services (2 days)
2010 Google Web Toolkit (3 days)
2006 Canada School of Public Service Leading Scientific Teams (3 days)
2005 IBM Websphere (5 days)

Academic Service Highlights

- **1990-2014** taught 50 regular UNB Computer Science courses
- **2012** Initiated cooperation btwn Computer Science at UNB and University of the Philippines Diliman
- **2010** Defined Joint Master's program between South East Univ China & UNB, 15 enrolled.
- **2007-11** Board member for VENUS and NEPTUNE ocean floor observatories, U of Victoria.
- **2007-9** Grant Selection Committee for NSERC Discovery Grants. Funds basic research in universities across Canada. Reviewed over 100 Computer Science proposals.
- **2006** General chair International Conference on Electronic Commerce, Fredericton.
- **2003-present** Editorial Board of Computational Intelligence.
- **2002-5** President of Canadian Artificial Intelligence Society CSCSI.
- **1998-9** developed and delivered *Java for Experienced Programmers*, three-day course to industry.
- **1997-8** 16 weeks invited researcher: Max Planck Institute for Informatics, Technical Univ Darmstadt, and Univ of Koblenz-Landau. Funded by DAAD German Academic Exchange Service.
- Program chair 12 conferences and workshops, including CASCON 2007, Intl Conf on E-Commerce 2006, Canadian AI 2003.

Publications, Editorships, Prototypes, Talks and Awards

- 75 peer reviewed publications, including 11 journal papers, H-index 13, i10-index 15
- Editor for 3 special issues: Electronic Commerce Research & Applications, Computational Intelligence, Journal of Business & Technology.
- Published prototype on SourceForge: jDREW, 3500 downloads since 2002, sole developer.
- Talks: 40 invited talks in Asia, North America and Europe, including keynote at 2013 IEEE ICCKE.

2013 Winner Ontology Classification Live competition, 2013 OWL Reasoner Evaluation Workshop
2011 Best Paper Award Canadian Artificial Intelligence Graduate Student Symposium
2009 Finalist for Knowledge Industry Research Award, Fredericton: SAVOIR
2007 Ontario Research and Innovation Optical Network (ORION) Discovery Award
2006 and **2004** NRC IIT Award: Industrial Partnership and General.
1998 UNB Merit Award, three teaching award nominations
1986-90 Industrial Academic Award, Bell Northern Research, supported PhD studies.

See http://www.cs.unb.ca/~bspencer/Resume.pdf