

BAX SMITH, B.Sc., B.Eng., Ph.D. CANDIDATE

18 Easterbrook Dr.

Torbay, Newfoundland, Canada

Phone: (709) 437-6043

Email: Baxter.Smith@gmail.com

OBJECTIVE

To obtain a position that best suits my talents so I can contribute to the company's growth.

SUMMARY

Electrical Engineer with over 5 years' experience in machine vision and pattern recognition, dedicated to solving problems and always in pursuit of new and innovative ways of doing things. Extensive knowledge of software and hardware, development and integration, within a business-style organization. Independent, creative, inquisitive, energetic and eager to learning new things.

PROFESSIONAL EXPERIENCE

Research Engineer

C-CORE

Sept 2000 – Present

St. John's, NL

Designed and implemented Machine Vision applications including:

- Real-time drill-hole recognition software
- Wood chip visual recognition software
- Rock visual inspection software
- Seating position recognition for smart airbag system

Software Developer

Charles River Analytics

Jan–Apr 2000

Cambridge, Mass., USA

Developed automatic target recognition system for US Navy.

- Based on Support Vector Machines (SVM).
- Components included image segmentation, classification, and Gabor Filtering.

Hardware/Software Developer

Memorial University

Sept-Dec 1999

St. John's, NL

Planned and delivered a PID based controller for a Term 6 Control Systems Lab.

- Bread boarded a design based on a PIC and programmed the PIC in assembly.
- Controller was programmed to read data from an ADC and run it through a PID control loop or send it to a PC via a serial port. The resulting data was then output to a DAC.

Software/Hardware Developer

Institute for Marine Dynamics – Canadian National Research Council

Jan-Apr, Aug-Dec 1998

St. John's, NL

Developed Dynamic Positioning software for the control of multi-fixed-thruster and multi-rotating-thruster ships.

- Graphical User Interface design, thrust allocation algorithm development, TCP/IP programming, and Remote Access of PCs.
- Formulated the control algorithm based on optimal control theory.
- Utilized Kalman Filtering of wave motion and devised thrust allocation algorithms.
- Created a rudder control system utilizing the Z180 microprocessor.

Lab Assistant

Chet Jablonski – Dept. of Chemistry, Memorial University

June-Aug 1996

St. John's, NL

Configured and operated an HPLC (High Performance Liquid Chromatography) instrument to separate and measure concentrations of various organic compounds. Interfaced the HPLC instrument to a PC for data acquisition via an ADC.

EDUCATION

Ph.D. Candidate, Electrical Engineering, Memorial University
B.Eng., Electrical Engineering, Memorial University
B.Sc., Chemistry, McGill University

AWARDS AND SCHOLARSHIPS

NSERC PGSB Scholarship (2003)
S. M. Blair Family Foundation Award for Contribution to Development of Canada's Resources (2002)
NSERC PGSA Scholarship (2001)
Atlantic Accord Career Development Award (2001)
Graduate Student Fellowship (2001)
APEGN Award for Work-Term 3
Quebec/Labrador Scholarship (1999)
Grimes/Weld Scholarship (1998)
Dr. S. M. Blair Memorial Alumni Award for Excellence in Engineering (1998)
Bechtel Canada Limited Scholarship (1998)
Dean's List 2001, 2000, 1999, 1998, 1997

PUBLICATIONS

Smith, B., "AIRBalloons: Interactive Games for Kids", NECEC 2004
Smith, B., "Fast Training of Multi-Class Support Vector Machines", NECEC 2004
Smith, B., "AR²kanoid: An Augmented Reality Video Game", NECEC 2003
Smith, B., Gosine, R., "BARViS: Bax's Augmented Reality Vision System", NECEC 2002
Smith, B., Gosine, R., "Support Vector Machines for Object Recognition", NECEC 2001
Millan, J., Smith, B., "A Dynamic Positioning System for Ship Model Tests", NECEC 1998

HARDWARE/SOFTWARE EXPERIENCE

Software	Hardware
<ul style="list-style-type: none">• Languages: Java, C/C++, Qbasic, VB, Delphi, Matlab, Python, Assembly• Operating Systems: DOS, Win9x, WinNT, Win2000, Linux• 3D Programming: OpenGL, Augmented Reality• Computer Vision/Image Processing: IPL, OpenCV, MIL, MATLAB, DirectShow• Embedded Systems: Optimization, PIC, ST, Z80, HC11, 4SightII• Pattern Recognition/Learning/Data Mining: ANNs, ES/DT, SVMs, FL, GA/GP• Control Systems: Dynamic Positioning, Kalman Filter, PID, Optimal• Concurrent Programming: Java Threads, C++ Threads, MPC• Network Programming: JINI, RMI, XMLRPC, Sockets	<ul style="list-style-type: none">• Circuit design, testing and soldering• Embedded Systems development using 8088/8086, z180, MC68000, PIC16C, PIC16F, ST9• Digital Multi-Meter, Oscilloscope, Function Generators, Digital Logic Analyzer• OP-Amps, transistors, resistors, capacitors, signal filters, ADC, DAC, RS-232, multiplexers, custom-built joysticks• Interfacing, running, monitoring and acquiring data from instruments via computer• Controlling brush and brushless motors, and closed-loop control