PATRICK C. CONNOR BScE, MScE, PhD, PEng   patrick.c.connor@gmail.com ❖ (902) 676-2524

CURRICULUM VITAE

EDUCATION:

Ph.D., Computer Science   *December 2013*
Dalhousie University, Halifax, NS
          4.2 cumulative (4.3 scale)

M.Sc.E, Electrical Engineering   *May 2004*
University of New Brunswick, Fredericton, NB
          4.1 cumulative (4.3 scale)

B.Sc.E, Computer Engineering   *December 2001*
University of New Brunswick, Fredericton, NB
          3.5 cumulative (4.3 scale)

WORK EXPERIENCE:

Research and Development Lead and Postdoctoral Fellow   *June 2014 - Present*
At ViTRAK Systems Inc., I began as a postdoctoral fellow to investigate ways by which to identify people by the way they walk on pressure sensitive flooring. Afterward, I was hired as Research and Development Lead. Tasks in these roles have included:
  - Conducting data collection of 80 participants, including the human ethics application
  - Developing pattern recognition algorithms for identifying people by their gait
  - Drafting a survey paper on gait recognition techniques
  - Working with an embedded system running linux
  - Developing a gait recognition demonstration application
  - Data analysis for evaluating the quality of pressure sensors

Sessional Instructor   *January - April, 2012*
In the Winter Term of the 2011/2012 academic year, I taught "Animated Computing", a first-year introduction to game design and robotics course. I was responsible for delivering lectures, preparing evaluation materials (including the exam) and managing lab TAs (hiring and prepping). Course Details at a Glance:
  - 85 enrolled students (75 regular class attendees)
  - Three 50-min lecture periods per week, Two 2-hour labs per week
  - 3 lab sections, 2 Teaching Assistants per section = 6 TAs
  - 2 Course Projects (Robotics Project and Game Design Project)
  - Invited Lecture from Industry: MindSea Development Inc. (smartphone application development)

Software Developer   *2004 - 2009*

At Universal Systems Ltd. (CARIS), I worked closely with a senior developer and have:

- Managed the triangular irregular network library (C++) and acted as a liaison between the computational geometry team and various application development teams.
- Developed and tested computational geometry algorithms
- Developed and implemented a novel method to estimate the uncertainty of interpolated data
- Made formal technical presentations
- Assisted in auditing software design and development processes for ISO 9000:2001 standard compliance

CREDENTIALS, ACADEMIC DISTINCTIONS, AND AWARDS:

NSERC Industrial Research and Development Fellowship   *2014 - 2016*

$30000/year + contribution from industrial partner

Certificate of University Teaching and Learning   *2013*

Dalhousie University

Faculty of Graduate Studies and Walter C. Sumner Fellowships   *2009 - 2011*

Dalhousie University and Walter C. Sumner Foundation
$18000/year + tuition fees

Professional Engineer (P.Eng)   *2008 - Present*

Association of Professional Engineers and
Geoscientists of New Brunswick and Prince Edward Island

VOLUNTEER AND LEADERSHIP EXPERIENCES:

Setup Team Leader and Sound Technician   *2011 - 2014*

At LifeBridge Community Church in Cole Harbour, Nova Scotia, I:

- Organize a team to carry out Sunday service setup activities
- Setup and operate the PA sound equipment for the service

ISO 9001:2000 Internal Auditor   *2008 - 2009*

While working at CARIS, I volunteered as an internal auditor. There I:

- Interviewed employees about their daily work activities
- Evaluated company procedures against ISO 9000:2001 specifications
- Wrote audit reports and accompanying non-conformance reports

SELECTED PUBLICATIONS: **Original Research Articles**

P. Connor, "Comparing and combining underfoot pressure features for shod and unshod gait biometrics," in Proc. of Technologies for Homeland Security 2015, p. 1-6

P. Connor, P. Hollensen, O. Krigolson, T. Trappenberg, "A biological mechanism for Bayesian feature selection: weight decay and raising the LASSO," Neural Networks 67, p. 121-130, July 2015

P. Connor, V. LoLordo, T. Trappenberg, "An Elemental Model of Retrospective Revaluation Apart from Within-Compound Associations," Learning and Behavior 42 (1), p. 22-38, March 2014 (Winner of the annual Clifford T. Morgan best article award in Learning and Behavior)

P. Connor, T. Trappenberg, "Biologically Plausible Feature Reduction through Relative Correlation," IJCNN 2013, p. 1-8, August 2013

P. Connor, T. Trappenberg, "Characterizing a Brain-Based Value-Function Approximator", in Proc. *Canadian AI 2011*, St. Johns, NL, June 2011. p. 362-365

W. Connors, P. Connor, T. Trappenberg "Detection of Mine-Like Objects Using Restricted Boltzmann Machines," in Proc. *Canadian AI 2010*, Ottawa, ON, June 2010. p. 362-365

P. Connor, M. Stevenson, "Identifying Distinguishing Size and Shape Features of Mine-like Objects in Sidescan Sonar Imagery," in Proc. *2004 Canadian Conference on Electrical and Computer Engineering*, Niagara Falls, ON, May 2004. p.1263-1267

                                                          Extended Abstracts and Posters

P. Connor, L. Mattina, T. Trappenberg, "Simulating Hyperactivity in ADHD using Reinforcement Learning", JNNS 2011, Okinawa, Japan

T. Trappenberg, P. Hollensen, P. Connor, "Sparse Competitive Coding in Striatal and Cortical Models", ICCN 2011, Hokkaido, Japan [Abstract accepted but withdrawn]

P. Connor, T. Trappenberg, "Implicit Reinforcement: Unovershadowing by Lateral Inhibition in a Striatal Model", ICCNS 2011, Boston, MA

P. Connor, T. Trappenberg, "A New Functional Role for Lateral Inhibition in the Striatum: Pavlovian Conditioning", Cosyne 2011, Salt Lake City, UT

T. Trappenberg, M. Watanabe, P. Connor, D. Munoz, "Modelling anti-saccades from physiological data in the basal ganglia," *2010 Canadian Neuroscience Meeting*, Ottawa, ON, Poster, May 2010.