

2043 MacDonald St  
Vancouver BC CANADA V6K 3Y2

tj@tjradcliffe.com  
(778) 875-0946

## **EDUCATION & PROFESSIONAL**

*Doctor of Philosophy:* Physics, Queen's University at Kingston, 1991

*Master of Science:* Physics, Queen's University at Kingston, 1987

*Bachelor of Science:* Engineering Physics, Queen's University at Kingston, 1984

*Professional:* Licensed professional engineer in BC (APEGBC) and Ontario (PEO)

## **ACADEMIC**

*Adjunct Assistant Professor,* Department of Pathology and Molecular Medicine, Queen's University, 2007-2013

*Adjunct Assistant Professor,* School of Computing, Queen's University, 2000-2005

*Adjunct Assistant Professor,* Department of Physics, Queen's University, 1995

*Post-doc,* Physics, Queen's, 1993-1996. SNO calibration & simulation

*Post-doc,* Medical Physics, Manitoba, 1992. Mega-voltage imaging, screen physics.

*Post-doc,* Physics, Caltech, 1991. Reactor neutrino detector design & simulation.

## **AWARDS**

*2016 Breakthrough Prize for Fundamental Physics:* I was one of 1380 physicists named in this award for my work as part of the Sudbury Neutrino Observatory.

## **CAREER HIGHLIGHTS**

### ***August 2015-present: Director of Engineering, ActiveState Software Inc.***

Reporting to the CEO, I have led a new development team through a successful transition from multiple legacy build systems that were undocumented and unmaintainable. to a unified Perl-based builds system that covers Perl, Python and Tcl on multiple platforms, and is being extended to cover Go, Ruby, Lua, and NodeJS. I have been heavily involved in strategic planning for the company's future, as well as engaging in deep collaboration with marketing and sales to encourage revenue growth, including blogging and speaking at conferences and events.

### ***March 2003-present: President, Predictive Patterns Software Inc***

PPS is a scientific and software consulting firm focused on algorithm design and implementation, embedded development, data analysis, and simulation. Projects include development of fast 2D/3D multi-modal image registration algorithms for real-time (intra-operative) cardiac imaging and spinal imaging, genomic data analysis using supervised and unsupervised machine learning algorithms including novel statistical approaches, and design of new surgical procedures for orthopaedic implants.

### ***August 2009-July 2015: Software Manager/Engineer, PDS, Inc.***

Development of embedded software for automated water testing. All phases of software life-cycle. Embedded Linux (C++), PIC32 (C), algorithm design, UI/UX design, and data analysis (Python). Support. Managed team. Worked closely with

hardware/electronics/optics team and university-based biochemistry research group.

***March 2002 - March 2003: Director of Software Development, MMC***

Reporting to the President, managed multi-functional team that produced MMC's award-winning GeneLinker data mining software. Dealt with difficult situations including downsizing and eventual dissolution of the company during dot-com crash.

***April. 1996- April 2002 : Commercial software positions.***

Senior developer/designer at several software companies, including established enterprises (Hummingbird Communications) and startups (iGO Technologies Inc.)

**SELECTED PUBLICATIONS & PATENTS**

Xiao Zhang, Jiamin Chen, Tom Radcliffe, Dave P. LeBrun, Victor A. Tron and Harriet Feilotter, An Array-Based Analysis of MicroRNA Expression Comparing Matched Frozen and Formalin-Fixed Paraffin-Embedded Human Tissue Samples, J Mol Diagn. 2008; 10: 513-519

U.S. Patent 6,990,220, Apparatuses and methods for surgical navigation, Ellis R. and Radcliffe, T., granted January 24, 2006

Q.R. Ahmad et al (SNO Collaboration), Measurement of the rate of  $\nu(e) + d \rightarrow p + p + e(-)$  interactions produced by (8)B solar neutrinos at the Sudbury Neutrino Observatory. Phys. Rev. Lett. 2001;87(7):071301

T. Radcliffe, S. Shalev and R. Rajapakshe, Pseudo-Correlation: a Fast, Robust, Absolute, Gray Level Image Alignment Algorithm, Medical Physics 21 (1994) 761

M. Chen, T. J. Radcliffe, D. A. Imel, H. Henrikson and F. Boehm, New Limits on the 17 keV Neutrino, Phys. Rev. Lett. 69 (1992) 3151

**OTHER SKILLS**

Expert: C++, Python, C. Intermediate: MATLAB, Fortran, Java, Perl, SQL, various other languages. Experienced with PIC32, PIC18 in C. Expert in image processing, Bayesian statistics, machine learning, simulation, radiation transport physics, radiation detection, numerical methods, XML, wxWidgets and VTK. Windows and Linux experience. I also know which end of a soldering iron to hold.

**OTHER ACTIVITIES AND INTERESTS**

Sailing, canoeing, hiking, writing. Past mentor with FIRST Robotics Team 2809. Stage acting. Voice actor. Film writing/directing/acting with Vancouver B-Movie Factory. Improv and musical improv performer. Published poet and story-teller.

**REFERENCES**

**Available on request.**