5-2294 W. 5th Ave   tj@tjradcliffe.com
Vancouver BC CANADA V6K 1S3   (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.

Author

Darwin's Theorem: a romance of evolution (novel, Siduri Press, 2014)
Cindy-Loo You: http://www.siduri.net/cindylooyou/ (poetry)
Songs of Albion: http://www.siduri.net/songsofalbion/songs_of_albion.html (novella)

CAREER HIGHLIGHTS

August 2009-present: Software Manager, Pathogen Detection Systems, Inc.
Development of embedded software for automated water testing (PDS is a former client of my company, Predictive Patterns Software). All phases of software life-cycle, including supporting sales force with demo applications. Includes PIC32 (C) and embedded Linux development (C++), and various utilities (Python). Manage small team. Work includes algorithm development and data analysis, interfacing with university researchers in micobiology and biochemistry.

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, simulation and experiment design. Clients have included startups, research labs and established corporations. Successfully completed projects include the development of fast 2D/3D multi-modal image registration algorithms for real-time (intra-operative) cardiac imaging and spinal imaging, image segmentation algorithms, application development for waterborne pathogen detection and the design of new surgical procedures for novel orthopaedic implants. Development work is done primarily in C, C++ and Python.

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

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

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

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

OTHER SKILLS

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

OTHER ACTIVITIES AND INTERESTS

Sailing, canoeing, hiking, poetry, writing. Mentor with FIRST Robotics Team 2809, 2009-2012. Stage acting. Short film writing/directing/acting with Vancouver B-Movie Factory, 2014. Performer in Improv Comedy Institute Student Showcase, 2015, and completed ICI core series improv courses. Additional training on long-form improv and voice acting. Intro drawing course at Emily Carr, winter 2015. Screenwriting course at UBC, fall 2014. Short story writing course at SFU, winter 2014.

REFERENCES

Available on request.