Dr. Stephen Makonin

Address:	4871 Highlawn Drive	*Email:*	smakonin@sfu.ca
	Burnaby BC Canada	*Twitter:*	@SMakonin
	V5C 3T2	*Website:*	http://makonin.com
Phone:	+1 604-253-8288	*Blog:*	http://eco-sustain.org
Mobile:	+1 604-725-7838		

Citizenship: Canadian

Education

2010– 2014 **Doctor of Philosophy**
Simon Fraser University, School of Computing Science (Burnaby, Canada)
Thesis: Real-Time Embedded Low-Frequency Load Disaggregation
Advisor: Fred Popowich

2007 – 2009 **Bachelor of Technology**
British Columbia Institute of Technology
School of Computing and Academic Studies (Burnaby, Canada)
Major: Computer Systems with a Data Communications Specialization

1993 – 1996 **Diploma in Computer Technology**
Selkirk College (Castlegar, Canada)

2009 **Certificate, Electronics Technician**
George Brown College (Toronto, Canada)

Professional Affiliation

submitted & **Professional Engineer (PEng)**
under review Association of Professional Engineers and Geoscientists of British Columbia

2013 – now **Senior Member (smIEEE)**
Institute of Electrical and Electronics Engineers (IEEE)
Student Member and Member since 2008

2010 – now **Information Systems Professional (ISP)**
Canadian Information Processing Society (CIPS)

Research Experience

2014 – now **Postdoctoral Fellow & Research Associate**
Simon Fraser University, School of Engineering Science (Burnaby, Canada)
Advisor: Ivan V. Bajic

2014 – 2015 **Postdoctoral Fellow & Sessional Instructor**
Simon Fraser University, School of Computing Science (Burnaby, Canada)
Advisors: Wolfgang Stuerzlinger (postdoc) & Anthony Dixon (instructor)

2008 – 2015 **Research Associate**
British Columbia Institute of Technology, Applied Research (Burnaby, Canada)

Teaching Experience

Fall 2014, **Introduction to the Internet and the World Wide Web (CMPT 165)**
Spring 2015 Simon Fraser University, School of Computing Science
Students each semester: in-class 200, dist ed 225. TAs: 6.
Instructor rating by students: A/71%, B/26%, C/3%, D/0%, F/0%.

Industry Experience (Software Engineering)

2012 **Mitacs Accelerate Intern** (4 months)
Awesense Wireless Inc. (Vancouver, Canada)

2011 – 2012 **NSERC Engage Research Assistant** (8 months)
Embedded Automation, Inc. (Surrey, Canada)

2006 – 2008 **Co-Founder & CTO**
Vvvroom.com (Burnaby, Canada)

2006 **Vancouver Office Software Development Manager**
AbsolutePoker.com: ePrado Management, Inc. (Vancouver, Canada)

1996 – 2008 **Principal & Senior Software Developer**
Oponix Systems Inc. formerly Makonin Consulting Corp. (Burnaby, Canada)
Clients incl. Telus Mobility, Vancouver Costal Health, Sierra Wireless, Safeway
Canada, Quartech Systems, Engineering Central, ApexMail, OAN Services

Scholarships, Awards & Grants

2015   IEEE Vancouver Section Leadership and Contribution Award — Initiative

2012, 2014   SFU GSS Professional Development Grant

2014   SFU Faculty of Applied Science (FAS) Graduate Fellowship (PhD)

2012, 2014   Ebco/Eppich Graduate Scholarships in Intelligent Systems

2013, 2013   SFU Travel & Minor Research Award

2013   BCIT School of Energy Research Seed Funding Grant

2013   SFU President's PhD Scholarship

2012, 2013   SFU Graduate Fellowship (PhD)

2010   BCIT Vancouver 2010 Olympic Winter Games Legacy Fund Scholarship

Publications

BOOKS & THESES

Pacheco-Torgal, F., Rasmussen, E., Granqvist, C.-G., Ivanov, V., Kaklauskas, H. A., and **Makonin, S.**, editors (in draft). *Start-Up Creation: The Smart Eco-Efficient Built Environment*. Elsevier, ISBN: tbd.

Makonin, S. (2014). *Real-Time Embedded Low-Frequency Load Disaggregation*. PhD thesis, Simon Fraser University, School of Computing Science.

Bennett, D., **Makonin, S.**, Mayfield, V. W., Neustaedter, T., and Wrenn, M. R. (1996). *Visual C++ 5.0 Developer's Guide*. Sams Publishing, ISBN: 0672310317.

JOURNAL ARTICLES (PEER REVIEWED)

Makonin, S., Ellert, B., Popowich, F., Bajic, I. V., and Gill, B. (2015). AMPds: 2 years (2012-2014) of electricity, water, and natural gas consumption of a residential house in Canada. *Scientific Data*, NPG, [in submission].

Makonin, S., Popowich, F., Bajic, I. V., Gill, B., and Bartram, L. (2015). Real-Time Nonintrusive Load Monitoring (NILM). *IEEE Transactions on Smart Grid*, [in revised submission].

Makonin, S. and Popowich, F. (2014). Nonintrusive Load Monitoring (NILM) Performance Evaluation. *Energy Efficiency*, Springer, 8(4):809–814.

Makonin, S., Bartram, L., and Popowich, F. (2013). A Smarter Smart Home: Case Studies of Ambient Intelligence. *IEEE Pervasive Computing*, 12(1):58–66.

Makonin, S. and Popowich, F. (2012). Home Occupancy Agent: Occupancy and Sleep Detection. *GSTF Journal on Computing*, 2(1):182–186.

CONFERENCE PROCEEDINGS (PEER REVIEWED)

Makonin, S., McVeigh, D., Stuerzlinger, W., Tran, K., and Popowich, F. (2015). Mixed-Initiative for Big Data: The Intersection of Human + Visual Analytics + Prediction. In *Proceedings of the Hawaii International Conference on System Sciences (HICSS-49)*.

Wallace, J., Richardson, K., Gill, B., and **Makonin, S.** (2015). Cognitive Radio Technology: System Evolution. In *Proceedings of the 4th International Conference On Wireless Networks and Embedded Systems (WECON)*.

Makonin, S., Bajic, I. V., and Popowich, F. (2014). Efficient Sparse Matrix Processing for Nonintrusive Load Monitoring (NILM). In *Proceedings of the 2nd International Workshop on Non-Intrusive Load Monitoring*.

Makonin, S., Guzman Flores, L., Gill, R., Clapp, R. A., Bartram, L., and Gill, B. (2014). A Consumer Bill of Rights for Energy Conservation. In *Proceedings of the 2014 IEEE Canada International Humanitarian Technology Conference (IHTC)*.

Filsoof, R., Bodine, A., Gill, B., **Makonin, S.**, and Nicholson, R. (2014). Transmitting Patient Vitals Over a Reliable ZigBee Mesh Network. In *Proceedings of the 2014 IEEE Canada International Humanitarian Technology Conference (IHTC)*.

Makonin, S., Sung, W., Dela Cruz, R., Yarrow, B., Gill, B., Popowich, F., and Bajic, I. V. (2013). Inspiring Energy Conservation Through Open Source Metering Hardware and Embedded Real-Time Load Disaggregation. In *Proceedings of the 5th IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)*.

Makonin, S., Popowich, F., Bartram, L., Gill, B., and Bajic, I. V. (2013). AMPds: A Public Dataset for Load Disaggregation and Eco-Feedback Research. In *Proceedings of the 2013 IEEE Electrical Power and Energy Conference (EPEC)*.

Makonin, S., Popowich, F., Moon, T., and Gill, B. (2013). Inspiring Energy Conservation Through Open Source Power Monitoring and In-Home Display. In *Proceedings of the 2013 IEEE Power and Energy Society General Meeting*.

Makonin, S., Popowich, F., and Gill, B. (2013). The Cognitive Power Meter: Looking Beyond the Smart Meter. In *Proceedings of the 2013 26th Annual IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)*.

Makonin, S., Kashani, M., and Bartram, L. (2012). The Affect of Lifestyle Factors on Eco-Visualization Design. In *Proceedings of Computer Graphics International (CGI)*.

Makonin, S., Pasquier, P., and Bartram, L. (2011). Elements of Consumption: An abstract visualization of household consumption. In *Smart Graphics*, LNCS, 6815:194–198. Springer Berlin Heidelberg.

Makonin, S. and Popowich, F. (2011). An intelligent agent for determining home occupancy using power monitors and light sensors. In *Toward Useful Services for Elderly and People with Disabilities*, LNCS, 6719:236–240. Springer Berlin Heidelberg.

PUBLISHED PUBLICLY AVAILABLE DATASETS

Makonin, S. (2015). Almanac of Minutely Power dataset (AMPds). Harvard Dataverse, V2. DOI: http://dx.doi.org/10.7910/DVN/FIE0S4. [to be released, previous releases 2013 and 2014 found at http://ampds.org].

Makonin, S. (2015). 2010 ZigBee Sensor Data Collected From a House (in Vancouver, Canada) Dataset. Harvard Dataverse, V1. DOI: http://dx.doi.org/10.7910/DVN/2K9FFE.

POSTER SESSIONS

Makonin, S. (2014). Nonintrusive Load Monitoring (NILM): What an algorithm can tell you about your energy consumption. In *Poster Session at IEEE Vancouver Section Annual General Meeting*.

TECHNICAL REPORTS

Makonin, S. (2012). A Visualization Prototype for Detecting Energy Losses on a Power Grid. Awesense Wireless Inc. Mitacs-Accelerate Internship.

Makonin, S. (2012). Approaches to Non-Intrusive Load Monitoring (NILM) in the Home. PhD Depth Report, Simon Fraser University, School of Computing Science.

Makonin, S. (2008). Map with Wheels. BTech Major Project Final Report. British Columbia Institute of Technology, School of Computing and Academic Studies.

Invited Talks

INTERNATIONAL INVITATIONS

2015   **From Socioeconomic Concerns to Standardizing Accuracy to Water NILM**
The 2nd EU Nonintrusive Load Monitoring Workshop (London, UK), July 8.

BCIT TALK INVITATIONS

2014   **Why There Is Nothing Smart about the Current Smart Home & Smart Meter**
BCIT, School of Construction and the Environment, Building Sciences Masters
Program (Burnaby, Canada), Feb 18.

2014   **Using Computing and Engineering to Tackle Sustainability Problems with
Energy Consumption**
BCIT, School of Energy (Burnaby, Canada), Feb 21.

SFU TALK INVITATIONS

2013   **Load Disaggregation For Energy Conservation**
Our Own CMPT 120 Mini-Conference: Research in Computing Science, Sep 27.

2013   **Lightning Talks: Sustainability**
SFU Research Commons, July 18.
Radio broadcast: CJSF on July 25th at 2:30pm, Sustainable Futures Program.

2013   **The Cognitive Power Meter, Not The Smart Meter**
SFU Computing Science GSA Scientific Colloquium, June 19.

2010   **An Introduction to the Smart Grid**
SFU COGS 300 / CMPT 417 "Intelligent Systems" Course Lecture, April 8.

Service To Profession

CONFERENCE/WORKSHOP ORGANIZING, CHAIRING & HOSTING

2014 – now   **Local Arrangements Chair**
2016 IEEE World Congress on Computational Intelligence (WCCI)
Vancouver, Canada. July 25 – 29, 2016

2015   **Posters and PhD Track Chair**
Int. Conf. on Big Data and Analytics for Smart Cities (BigDASC)
Toronto, Canada. October 13, 2015

2015   **Organizer and Host**
IEEE Vancouver Windows 10 Hackathon
Burnaby, Canada. May 16 – 17, 2015, 28-hours

2014   **Organizer and Host**
IEEE Vancouver Kinect and Structure Sensor Hackathon
Burnaby, Canada. November 8 – 9, 2014, 28-hours

2014   **Web Co-Chair**
IEEE 15th Int. Conf. on High Performance Switching and Routing (HPSR)
Vancouver, Canada. July 1 – 4, 2014

INVITED JOURNAL REVIEWER

2015   IEEE Transactions on Smart Grid [regular reviewer, 1—2 manuscript/month]

2014 – 2015   IEEE Transactions on Mobile Computing [periodic reviewer]

2013   Springer's Energy Efficiency Journal [periodic reviewer]

TECHNICAL PROGRAM COMMITTEE MEMBER

2011 – 2015   Int. Conf. on Ubiquitous Computing and Ambient Intelligence (UCAmI)
[regular, yearly TPC member]

2015   Int. Conf. on Big Data and Analytics for Smart Cities (BigDASC)

2016, *2015*   First IEEE Workshop on Pervasive Energy Services (PerEnergy)

2012   2012 IEEE International Conference on Power and Energy (PECON).

EXTERNAL CONFERENCE REVIEWER

2011, 2013, Canadian Conference on Artificial Intelligence (Canadian AI)
2015

GRANTING AGENCY REVIEWER

2014 Mitacs Accelerate Grant Proposal External Reviewer

Volunteer Work

2014 – now **Chair**, IEEE Vancouver Joint Computing Chapter

2014 – now **Leader & Organizer**, IEEE/SFU Internet of Things (IoT) Club

2013 – now **Co-Chair & Treasurer**, Westside Montessori Academy PAC

2012 – 2014 **Membership Development Chair**, IEEE Vancouver Section