Stephen Makonin, PhD, PEng, smIEEE

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Citizenship: Canadian

Website: http://www.sfu.ca/~smakonin/
CompSust Lab: http://compsust.fas.sfu.ca

Education

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

2007 – 2009 **Bachelor of Technology (BTech)**, British Columbia Institute of Technology (Canada)
Major: Computer Systems with a Data Communications Specialization

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

2018 **Instructor Certificate**, Software Carpentry Foundation (Canada)

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

Professional Affiliation

2018 – now **Professional Engineer (PEng)**, Engineers and Geoscientists BC (EGBC)

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

Research Experience

2019 – now **Senior Software Engineer**
Simon Fraser University, Big Data Hub (Canada)

2017 – now **Adjunct Professor**
Simon Fraser University, School of Engineering Science (Canada)
PI of the Computational Sustainability Lab: http://compsust.fas.sfu.ca

2018 **Visiting Professor**
Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi, India)

2016 – 2017 **Postdoctoral Fellow**
University of British Columbia, Electrical and Computer Engineering (Canada)
Advisor: Z. Jane Wang

2014 – 2017 **Postdoctoral Fellow & Sessional Instructor**
Simon Fraser University, Engineering Science & Computing Science (Canada)
2015 – 2017 Advisor: Ivan V. Bajić (postdoc)
2014 – 2015 Advisors: Wolfgang Stuerzlinger (postdoc) & Anthony Dixon (instructor)

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

HQP Supervision

POSTDOCTORAL FELLOWS

2017 – now **Senior Supervisor of Md. Zulfiquar Ali Bhotto — Postdoctoral Fellow**
Simon Fraser University, School of Engineering Science (Canada)
Research Areas: NILM, smart grid optimization

DOCTORAL STUDENTS

2018 – now **Senior Supervisor of Alejandro Rodriguez-Silva — PhD Thesis (on going)**
Simon Fraser University, School of Engineering Science (Canada)
Thesis: tbd

MASTERS STUDENTS

TBD **Senior Supervisor of Maria Tu — MASc Thesis (Starting Jan 2021)**
Simon Fraser University, School of Engineering Science (Canada)
Thesis: tbd

2019 – now **Senior Supervisor of Richard Jones — MASc Thesis (defending Dec 2020)**
Simon Fraser University, School of Engineering Science (Canada)
Awards/Scholarships: Graduate Dean's Entrance Scholarship (GDES), NSERC CGS-M
Thesis: tbd

2018 – 2020 **Co-Supervisor of Alon Harell — MASc Thesis (defended Aug 19, 2020)**
Simon Fraser University, School of Engineering Science (Canada)
Awards/Scholarships: NSERC CGS-M
Thesis: Deep Learning Applications in Non-Intrusive Load Monitoring

2014 – 2015 **Co-Supervisor of Bradley Ellert — MSc Thesis (defended Aug 17, 2015)**
Simon Fraser University, School of Computing Science (Canada)
Thesis: Leveraging Submetered Electricity Loads to Disaggregate Household Water-Use

UNDERGRADUATE RA/CO-OP

2020 **Daisy Chen — CompSust RA (on going, 6 months)**
Simon Fraser University, Sustainable Energy Engineering (Canada)
Project: NILM Toolkit - develop a testing and training toolset

2020 **Xing Chen Cao — CompSust RA (on going, 6 months)**
Simon Fraser University, Engineering Science (Canada)
Project: NILM Toolkit - develop a testing and training toolset

2020 **Ramy ElMallah — Big Data RA (on going, 5 months)**
Simon Fraser University, Big Data Hub/Computing Science (Canada)
Project: Marine acoustic classification (deep learning, federated learning, Raspberry Pi)

VISITING SCHOLARS

2019 **David Murray — PhD, University of Strathclyde, UK (2 months)**

2019 **Bundit Buddhahai — PhD, KMUTT, Thailand (6 months)**

2019 **Christoph Klemenjak — PhD, University of Klagenfurt, Austria (6 months)**

2018 **Shikha Singh — PhD, IIIT-Delhi, India (½ month)**

2017 – 2018 **Megha Gaur — PhD, IIIT-Delhi, India (6 months)**

External Examiner (Viva)

2019 **Georgia Elafoudi (PhD Electronic and Electrical Engineering)**
University of Strathclyde, Glasgow, UK
Thesis: Meaningful Information Extraction from IoT Measurements using Signal Information Processing

Teaching Experience

Fall 2014, Spring 2015 **Introduction to the Internet and the World Wide Web (CMPT 165)**
Simon Fraser University, School of Computing Science
Students each semester: in-class section 200 (90% ESL Mandarin), dist. ed. section 225
TAs/TMs: in-class section 3, dist. ed. section 3

Grants & Funding **(PI = Principal Investigator)**

2019 **PI** — NSERC COVID19 Top-Up Supplement Award ($8,480)

2020 **Canadian PI** — EUREKA Grant (€1,120,000, 2 years, Canada/South Korea)
Title: Development of integrated NILM algorithms considering multiple resolutions and designing service scenarios

2020 **Co-PI** — SSHRC Knowledge Synthesis Grant ($50,000, 1 year)
Title: Tackling the Carbon Footprint of Streaming Media

2019 **PI** — NSERC Engage Grant ($25,000, 6 months)
Title: Inferring power grid transformer to meter association using inconsistent geospatial data

2019 **Investigator** — European Commission Horizon2020 Grant (2 years)
Title: SENSors and Intelligence in BuLt Environment (SENSIBLE) project
[*indirect moneys to allow for international grad student visits*]

2019 **PI** — NSERC Discovery Launch Supplement Award ($12,500)

2018 **PI** — NSERC Discovery Grant ($140,000, 5 years)
Title: Non-Intrusive Load Monitoring (NILM)

2016 **Postdoc** — IC-IMPACTS NCE Project Grant ($133,000, 2 years, 11.2% success rate)
Title: Energy and Water Disaggregation for Non-Intrusive Load Monitoring in Buildings
[I was a main author and organizer of grant but could not be co-PI due to funding rules]

2012, 14 **PhD Candidate** — SFU GSS Professional Development Grant (2 at $500 each)

2013 **PI** — BCIT School of Energy Research Seed Funding ($10,000, 4 months)
Title: Branch Circuit Ammeter and Data Logger for Smart Grid/Home Application

Publications **(see citation report at end of CV)**

BOOKS

Pacheco-Torgal, F., Rasmussen, E., Granqvist, C.-G., Ivanov, V., Kaklauskas, H. A., and **Makonin, S.**, editors (2016). *Start-Up Creation: The Smart Eco-Efficient Built Environment, 1st Edition*.
(2020). *Start-Up Creation: The Smart Eco-Efficient Built Environment, 2nd Edition*.
Woodhead Publishing/Elsevier, ISBN: 9780128199466 / eBook 9780128199473.

Bennett, D., **Makonin, S.**, Mayfield, V. W., Neustaedter, T., and Wrenn, M. R. (1996). *Visual C++ 5.0 Developer's Guide*. Sams Publishing, ISBN: 978-0-672-31031-7.

JOURNAL ARTICLES (PEER REVIEWED)

Klemenjak, C., **Makonin, S.**, and Elmenreich, W. (2020). Investigating the Performance Gap between Testing on Real and Denoised Aggregates in Non-Intrusive Load Monitoring. *IEEE Signal Processing Letters*. [in review]

Bhotto, Md. Z. A., **Makonin, S.**, and Bajić, I. V. (2020). Optimal Battery Usage for Dynamic Nanogrid Energy Management. *IEEE Trans. on Sustainable Energy*. [in review]

Harell, A., Jones, R., **Makonin, S.**, and Bajić, I. V. (2020). PowerGAN: Synthesizing Appliance Power Signatures Using Generative Adversarial Networks. *IEEE Trans. on Smart Grid*. [in review]

Bhotto, Md. Z. A., Jones, R., **Makonin, S.**, and Bajić, I. V. (2020). Short-Term Microgrid Demand Prediction Using an Ensemble of Linearly-Constrained Estimators. *IEEE Trans. on Power Systems*. [in revision]

Dinesh, C., **Makonin, S.**, and Bajić, I. V. (2020). Residential Power Forecasting Based on Affinity Aggregation Spectral Clustering. *IEEE Access*, 8:99431–99444.

Dinesh, C., **Makonin, S.**, and Bajić, I. V. (2019). Residential Power Forecasting Using Load Identification and Graph Spectral Clustering. *IEEE Trans. on Circuits and Systems II: Express Briefs*, 66(11):1900–1904.

Gaur, M., **Makonin, S.**, Bajić, I. V., and Majumdar, A. (2019). Performance evaluation of techniques for identifying abnormal energy consumption in buildings. *IEEE Access*, 7:62721–62733.

Makonin, S. (2019). HUE: The Hourly Usage of Energy Dataset for Buildings in British Columbia. *Data in Brief*, 23(103744):1–4.

Makonin, S., Wang, Z. J., and Tumpach, C. (2018). RAE: The Rainforest Automation Energy Dataset for Smart Grid Meter Data Analysis. *Data*, 3(1):1-9.

Bhotto, Md. Z. A., **Makonin, S.**, and Bajić, I. V. (2016). Load Disaggregation Based on Aided Linear Integer Programming. *IEEE Trans. on Circuits and Systems II: Express Briefs*, 64(7):792–796.

Makonin, S., Ellert, B., Bajić, I. V., and Popowich, F. (2016). Electricity, water, and natural gas consumption of a residential house in Canada from 2012 to 2014. *Scientific Data*, 3(160037):1–12.

Makonin, S., Popowich, F., Bajić, I. V., Gill, B., and Bartram, L. (2016). Exploiting HMM Sparsity to Perform Online Real-Time Nonintrusive Load Monitoring. *IEEE Trans. on Smart Grid*, 7(6):2575–2585.

Makonin, S. and Popowich, F. (2015). Nonintrusive Load Monitoring (NILM) Performance Evaluation. *Energy Efficiency*, 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)

Jones, R., Klemenjak, C., **Makonin, S.**, and Bajić, I. V. (2020). Stop! Exploring Bayesian Surprise to Better Train NILM. In *Proceedings of the 5th International Workshop on Non- Intrusive Load Monitoring*.

Singh, S., Majumdar, A., and **Makonin, S.** (2020). Compressive Non-Intrusive Load Monitoring. In *Proceedings of the 7th ACM International Conference on Systems for Energy-Efficient Built Environments, Cities, and Transportation* (*BuildSys*).

Jones, R., Rodriguez-Silva, A., and **Makonin, S.** (2020). Increasing the Accuracy and Speed of Universal Non-Intrusive Load Monitoring (UNILM) Using a Novel Real-Time Steady-State Block Filter. In *Proceedings of the 11th Conference on Innovative Smart Grid Technologies* (*ISGT*).

Klemenjak, C., **Makonin, S.**, and Elmenreich, W. (2020). Towards Comparability in Non-Intrusive Load Monitoring: On Data and Performance Evaluation. In *Proceedings of the 11th Conference on Innovative Smart Grid Technologies (ISGT)*.

Rodriguez-Silva, A., and **Makonin, S.** (2019). Universal Non-Intrusive Load Monitoring (UNILM) Using Filter Pipelines, Probabilistic Knapsack, and Labelled Partition Maps. In *Proceedings of the 11th IEEE PES Asia-Pacific Power and Energy Engineering Conference 2019 (APPEEC)*.

Klemenjak, C., Reinhardt, A., Pereira, L., **Makonin, S.**, Bergés, M., and Elmenreich, W. (2019). Electricity Consumption Data Sets: Pitfalls and Opportunities. In *Proceedings of the 6th ACM International Conference on Systems for Energy-Efficient Built Environments, Cities, and Transportation (BuildSys)*.

Harell, A., **Makonin, S.**, and Bajić, I. V. (2019). WaveNILM: A Causal Neural Network for Power Disaggregation from the Complex Power Signal. In *Proceedings of the 44th International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*.

Guzman, L., **Makonin, S.**, and Clapp, R. A. (2019). CarbonKit: Designing A Personal Carbon Tracking Platform. In *Proceedings of SocialSense '19: Fourth International Workshop on Social Sensing*.

Dinesh, C., **Makonin, S.**, and Bajić, I. V. (2017). Incorporating Time-Of-Day Usage Patterns Into Non-Intrusive Load Monitoring. In *Proceedings of the 5th IEEE Global Conference on Signal and Information Processing (GlobalSIP)*.

Makonin, S. (2016). Investigating the Switch Continuity Principle Assumed in Non-Intrusive Load Monitoring (NILM). In *Proceedings of the 29th Annual IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)*.

Makonin, S., McVeigh, D., Stuerzlinger, W., Tran, K., and Popowich, F. (2016). Mixed-Initiative for Big Data: The Intersection of Human + Visual Analytics + Prediction. In *Proceedings of the 49th Hawaii International Conference on System Sciences (HICSS)*, pp. 1427-1436.

Ellert, B., **Makonin, S.**, and Popowich, F. (2015). Appliance Water Disaggregation via Non-Intrusive Load Monitoring (NILM). In *Proceedings of the EAI International Conference on Big Data and Analytics for Smart Cities (BigDASC)*.

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., Bajić, 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 Bajić, 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 Bajić, 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.

POSTER & DEMO SESSIONS

Harell, A., **Makonin, S.**, and Bajić, I. V. (2018). A Recurrent Neural Network for Multisensory Non-Intrusive Load Monitoring on a Raspberry Pi. In *Proceedings of the EEE 20th International Workshop on Multimedia Signal Processing (MMSP)*.

TECHNICAL REPORTS

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

Service To Profession

ADVISORY BOARDS/COMMITTEES

2020 – now **Advisory Board Member**, *IEEE DataPort*

JOURNAL EDITORSHIPS

2020 – now **Editor in Chief**, *IEEE DataPort Metadata Review Board*

2019 – now **Editorial Board Member**, *Scientific Data*, Nature

GRANT REVIEWER

2014, 17, 19 **External Grant Reviewer**, Mitacs Accelerate Grant Proposal, Canada

2018 **External Grant Reviewer**, EPSRC Grant Proposal, UK

GENERAL CHAIR & ORGANIZER

2020 5th International Workshop on Non-Intrusive Load Monitoring (NILM)
Yokohama, Japan [virtual/online]. November 18 – 20

2019 Advanced Signal Processing for Non-intrusive Load Monitoring Special Session
44th International Conference on Acoustics, Speech, and Signal Processing (ICASSP)
Brighton, UK. May 12

2018 4th International Workshop on Non-Intrusive Load Monitoring (NILM)
Auston, TX, USA. March 7 – 8

2017 The Plenty of Fish (POF) 24hr Hackathon
Burnaby, Canada. October 13 – 14, 24-hours

2016 3rd International Workshop on Non-Intrusive Load Monitoring (NILM)
Vancouver, Canada. May 14 – 15

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

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

WEBSITE & SOCIAL MEDIA CHAIR

2016 14th IEEE International NEW Circuits And Systems (NEWCAS) Conference
Vancouver, Canada. June 26 – 29

2016 29th Annual IEEE Canadian Conf. on Electrical and Computer Engineering (CCECE)
Vancouver, Canada. May 15 – 18

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

TECHNICAL PROGRAM COMMITTEE (TPC) MEMBER

2020 eSim 2020, International Building Performance Simulation Association (IBPSA-Canada)

2019 11th IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)

2017 5th IFIP Conference on Sustainable Internet and ICT for Sustainability (SustainIT)

2015 – 2017 IEEE Workshop on Pervasive Energy Services (PerEnergy)

2016 Int. Workshop on Computational Energy Management in Smart Grids (CEMiSG)

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

2011 – 2015 Int. Conf. on Ubiquitous Computing and Ambient Intelligence (UCAmI)

2012 IEEE Int. Conf. on Power and Energy (PECON)

Keynotes, Invited Talks & News/Media Interviews

2020 **Laura Marks and Stephen Makonin: Streaming video is overheating the planet**
The Vancouver Sun (Vancouver, BC, Canada), Op-Ed, August 15.

2019 **News Talk Show Interview/Discussion on CarbonKit and Personal Carbon Tracking**
The Danielle Smith Show (Calgary, AB, Canada), 22 min, October 2.

2018 **Data, Datasets, and Data Engineering**
The 5th EU Nonintrusive Load Monitoring Workshop (Duisburg, Germany), October 1.

2018 **NILM Real-World Testing: An Emulator for NILM and Smart Home Research**
4th International Workshop on Non-Intrusive Load Monitoring (Austin, USA), March 8.

2017 **The Expectations of Non-Intrusive Load Monitoring (NILM)**
The International Conference on Application of Demand-Side Management (DSM) and Data Driven Technology in Energy Saving (Taipei, Taiwan), November 22.

2017 **NILM Real-World Testing: The Case for an Emulator**
The 4th EU Nonintrusive Load Monitoring Workshop (London, UK), November 7.

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

Scholarships & Awards

2017 IEEE Signal Processing Society Appreciation Certificate — Leadership & Support

2015 IEEE Vancouver Section Leadership and Contribution Award — Initiative

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

2012, 14 Ebco/Eppich Graduate Scholarships in Intelligent Systems

2013 SFU Travel & Minor Research Award (2 awards won that year)

2013 SFU President's PhD Scholarship

2012, 13 SFU Graduate Fellowship (PhD)

2010 BCIT Vancouver 2010 Olympic Winter Games Legacy Fund Scholarship

Industry Experience (Software Engineering)

2014 – now **Co-Founder & Senior Research Scientist** — SweetLightning (Calgary, Canada)

1996 – now **Senior Software Developer Consultant**
Oponix Systems Inc. formerly Makonin Consulting Corp. (1996-2010, Canada)
Clients incl. Telus Mobility, Vancouver Costal Health, Sierra Wireless, Safeway Canada, and Quartech Systems. Recent clients incl. Green Running (UK), and Itron (USA)

2017 – 2018 **Senior Software Engineer** — Knowledge Network (Canada)

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

2006 **Director of Software Development, Vancouver** — AbsolutePoker (Vancouver, Canada)
Reporting staff: 3 Software Developers, 1 QA Manager, 3 QA Testers
Department budget: $600,000/year

Volunteer Work

2020 – now **Strata Council Executive**, The Peak (EPS5447) at Simon Fraser University

2017 – now **Yearly Scholarship for Aboriginal Undergraduates** (Donor of), Simon Fraser University

2016 – now **Executive Member**, IEEE Vancouver Section
Vice-Chair, Signal Processing Chapter: 2016 – now
Chair, IEEE Vancouver Joint Computing Chapter: 2014 – 2016
Membership Development Chair, IEEE Vancouver Section: 2012 – 2014

2018 – 2020 **Director of Communication**, Burnaby Mountain Mantas Swim Club

2012 – 2019 **Executive Member**, Westside Montessori Academy PAC
Co-Chair: 2014/15 school year
Treasurer: 2014/15, 2015/16, 2016/17, and 2017/18 school years
Executive-at-Large: 2012/13 and 2018/19 school years

Download the latest version of this CV at: http://makonin.com/doc/SMakonin_CV.pdf

Citation Counts Report

This report was generated by https://github.com/smakonin/ScholarHacks **and reports** Google Scholar results**.**

Report generated on: 2020-11-20 07:45:40.698093

Citations = 1,240
h-index = 17
i10-index = 27

Paper Title	Citations	Journal IF
AMPds: A public dataset for load disaggregation and eco-feedback re...	258	
Exploiting HMM Sparsity to Perform Online Real-Time Nonintrusive Lo...	189	10.486
Electricity, water, and natural gas consumption of a residential ho...	118	6.776
Nonintrusive load monitoring (NILM) performance evaluation	116	1.961
A Smarter Smart Home: Case Studies of Ambient Intelligence	65	3.022
Load Disaggregation Based on Aided Linear Integer Programming	45	3.250
The cognitive power meter: Looking beyond the smart meter	34	
Visual C++ 5.0 Developer's Guide	34	
Real-time embedded low-frequency load disaggregation	31	
Efficient Sparse Matrix Processing for Nonintrusive Load Monitoring...	30	
WaveNILM: A Causal Neural Network for Power Disaggregation from the...	29	
RAE: The Rainforest Automation Energy Dataset for Smart Grid Meter ...	28	tbd
Investigating the Switch Continuity Principle Assumed in Non-Intrus...	20	
Mixed-Initiative for Big Data: The Intersection of Human + Visual A...	20	
The Affect of Lifestyle Factors on Eco-Visualization Design	20	
Towards Comparability in Non-Intrusive Load Monitoring: On Data and...	18	
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Elements of consumption: an abstract visualization of household con...	16	
A consumer bill of rights for energy conservation	14	
An intelligent agent for determining home occupancy using power mon...	14	
Appliance Water Disaggregation via Non-Intrusive Load Monitoring (N...	13	
Inspiring energy conservation through open source metering hardware...	12	
Residential power forecasting using load identification and graph s...	11	3.250
Incorporating Time-Of-Day Usage Patterns Into Non-Intrusive Load Mo...	11	
Inspiring energy conservation through open source power monitoring ...	11	
Home Occupancy Agent: Occupancy and Sleep Detection	11	tbd
Start-Up Creation: The Smart Eco-efficient Built Environment	7	
Universal Non-Intrusive Load Monitoring (UNILM) Using Filter Pipeli...	6	
HUE: The Hourly Usage of Energy Dataset for Buildings in British Co...	5	1.430
Cognitive Radio Technology: System Evolution	5	
Increasing the Accuracy and Speed of Universal Non-Intrusive Load M...	4	
Performance evaluation of techniques for identifying abnormal energ...	4	4.098
Transmitting Patient Vitals Over a Reliable ZigBee Mesh Network	4	
Exploring Bayesian Surprise to Prevent Overfitting and to Predict M...	1	
Residential Power Forecasting Based on Affinity Aggregation Spectra...	1	4.098
On Metrics to Assess the Transferability of Machine Learning Models...	1	
A Recurrent Neural Network for Multisensory Non-Intrusive Load Moni...	1	
Peer-Reviewed Conferences: 32 papers	606	
Peer-Reviewed Journals: 11 papers	593	38.371
Books Co-authored/Co-edited: 2 books	41	
Grand Totals: 45 papers	1,240	38.371

*** Papers with [in submission] status: 3 journal manuscript(s), 0 conference paper(s)

Note: Papers without a citation count are not listed above unless they are a journal paper.