PANDARASAMY ARJUNAN | CURRICULUM VITAE

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RESEARCH INTERESTS

Urban informatics, Energy sustainability, Cyber-Physical systems, Edge computing, Data Science and Machine Learning.

EDUCATION

Indraprastha Institute of Information Technology (IIIT) Delhi — **New Delhi, India**
PhD in Computer Science and Engineering — *July 2010 – April 2018*
Thesis title: Middleware systems and analytics for energy management in buildings.

Madurai Kamaraj University — **Madurai, India**
Master of Computer Applications — *Aug. 2004 – May 2007*

Manonmaniam Sundaranar University — **Tirunelveli, India**
Bachelor of Science in Computer Science — *July 2001 – May 2004*

EXPERIENCE

Berkeley Education Alliance for Research in Singapore Limited — **Singapore**
Postdoctoral Scholar — *June 2018 – Present*
Advisor: Prof. Kameshwar Poolla, University of California, Berkeley

Indraprastha Institute of Information Technology (IIIT) Delhi — **New Delhi, India**
PhD Scholar — *July 2010 – April 2018*

SenSing Private Limited — **Singapore**
Consultant (Data Science) — *Dec. 2017 – May 2018*

DataGlen Technologies Private Limited — **Bangalore, India**
Data Scientist — *June 2016 – May 2017*

IBM India Research Laboratory — **Bangalore, India**
Research Intern — *July 2014 – Oct. 2014*

University of California, Los Angeles — **Los Angeles, USA**
Visiting Graduate Researcher (Advisor: Prof. Mani B. Srivastava) — *Mar 2013 – Nov. 2013*

IBM Global Business Services — **Bangalore, India**
Associate System Engineer — *Jan. 2010 – July 2010*

HCL Technologies — **Cheanni, India**
Software Engineer — *July 2007 – Dec. 2009*

PUBLICATIONS

Refereed Journal articles

[J.6] *The Building Data Genome Project 2: Hourly energy meter data from the ASHRAE Great Energy Predictor III competition* Miller, Clayton, Kathirgamanathan, Anjukan, Picchetti, Bianca, *Arjunan, Pandarasamy*, Park, June Young, Nagy, Zoltan, Raftery, Paul, Hobson, Brodie W, Shi, Zixiao, and Meggers, Forrest, *Nature's Scientific Data 2020*. (accepted) **(Impact Factor: 6.776 and citations: 2)**.

[J.5] *The ASHRAE Great Energy Predictor III competition: Overview and results* Miller, Clayton, *Arjunan, Pandarasamy*, Kathirgamanathan, Anjukan, Fu, Chun, Roth, Jonathan, Park, June Young, Balbach, Chris, Gowri, Krishnan, Nagy, Zoltan, Fontanini, Anthony D, and others, *Science and Technology for the Built Environment, 24:1-21, 2020*. **(Impact Factor: 1.356 and citations: 1)**

[J.4] *EnergyStar++: Towards more accurate and explanatory building energy benchmarking Arjunan, Pandarasamy*, Poolla, Kameshwar, and Miller, Clayton, *Applied Energy, 276:115413, 2020*. **(Impact Factor: 8.848 and citations: 1)**

[J.3] *Islands of misfit buildings: Detecting uncharacteristic electricity use behavior using load shape clustering* Quintana, Matias, *Arjunan, Pandarasamy*, and Miller, Clayton, *Building Simulation, Springer, 2020*. **(Impact Factor: 2.472 and citations: 1)**

[J.2] *Hybrid Ventilation System and Soft-Sensors for Maintaining Indoor Air Quality and Thermal Comfort in Buildings* Vadamalraj, Nivetha, Zingre, Kishor, Seshadhri, Subathra, *Arjunan, Pandarasamy*, and Srinivasan, Seshadhri, *Atmosphere, 11(1):110, 2020*. **(Impact Factor: 1.775 and citations: 0)**

[J.1] *Apples or oranges? Identification of fundamental load shape profiles for benchmarking buildings using a large and diverse dataset* Park, June Young, Yang, Xiya, Miller, Clayton, *Arjunan, Pandarasamy*, and Nagy, Zoltan, *Applied Energy, 236:1280–1295, 2019*. **(Impact Factor: 8.848 and citations: 23)**

Refereed Conference and Workshop papers

[C.6] *Multi-User Energy Consumption Monitoring and Anomaly Detection with Partial Context Information Arjunan, Pandarasamy*, Khadilkar, Harshad D., Ganu, Tanuja, Charbiwala, Zainul M., Singh, Amarjeet, and Singh, Pushpendra, *Proceedings of the 2nd ACM International Conference on Embedded Systems for Energy-Efficient Built Environments (BuildSys '15), pages 35–44, 2015*. **(CORE[1] Rank: A and citations: 33)**

[C.5] *OpenBAN: An Open Building ANalytics Middleware for Smart Buildings Arjunan, Pandarasamy*, Srivastava, Mani, Singh, Amarjeet, and Singh, Pushpendra, *Proceedings of the 12th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous '15), pages 70–79, 2015*. **(CORE Rank: A and citations: 12)**

[1] The CORE Conference Ranking provides assessments of major conferences in the computing disciplines. See more details at https://www.core.edu.au/conference-portal

[C.4] *SensorAct: A Decentralized and Scriptable Middleware for Smart Energy Buildings Arjunan, Pandarasamy*, Saha, Manaswi, Choi, Haksoo, Gulati, Manoj, Singh, Amarjeet, Singh, Pushpendra, and Srivastava, Mani B., *Proceedings of the 12th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC-ATC-ScalCom '15), pages 11–19, 2015*. **(CORE Rank: B and citations: 8)**

[C.3] *Experiences with occupancy based building management systems* Batra, Nipun, *Arjunan, Pandarasamy*, Singh, Amarjeet, and Singh, Pushpendra, *Proceedings of the Eighth IEEE International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP '15), pages 153–158, 2013*. **(CORE Rank: N/A and citations: 32)**

[C.2] *SensorAct: A Privacy and Security Aware Federated Middleware for Building Management Arjunan, Pandarasamy*, Batra, Nipun, Choi, Haksoo, Singh, Amarjeet, Singh, Pushpendra, and Srivastava, Mani B., *Proceedings of the Fourth ACM Workshop on Embedded Sensing Systems for Energy-Efficiency in Buildings (BuildSys '12), pages 80–87, 2012*. **(CORE Rank: A and Citations: 60)**

[C.1] *MELOS: A Low-Cost and Low-Energy Generic Sensing Attachment for Mobile Phones* Bhardwaj, Abhishek, *Arjunan, Pandarasamy*, Singh, Amarjeet, Naik, Vinayak, and Singh, Pushpendra, *Proceedings of the 5th ACM Workshop on Networked Systems for Developing Regions (NSDR '11), Co-located with MobiSys'11, pages 27–32, 2011*. **(CORE Rank: N/A and Citations: 17)**

Refereed Poster and Demo papers

[P.5] *Collect, Compare, and Score: A Generic Data-Driven Anomaly Detection Method for Buildings* Rashid, Haroon, *Arjunan, Pandarasamy*, Singh, Pushpendra, and Singh, Amarjeet, *Proceedings of the Seventh ACM International Conference on Future Energy Systems (e-Energy '16), pages 1–2, 2016*.

[P.4] *E-Adivino: A Novel Framework for Electricity Consumption Prediction Based on Historical Trends* Saini, Shubham, *Arjunan, Pandarasamy*, Singh, Amarjeet, and Nambiar, Ullas, *Proceedings of the 2015 ACM Sixth International Conference on Future Energy Systems (e-Energy '15), pages 213-214, 2015*.

[P.3] *Sensoract: Design and implementation of fine-grained sensing and control sharing in buildings Arjunan, Pandarasamy*, Saha, Manaswi, Gulati, Manoj, Batra, Nipun, Singh, Amarjeet, and Singh, Pushpendra, *Proceedings of the 10th USENIX Symposium on Networked Systems Design and Implementation (NSDI), 2013*. **(CORE Rank: B and citations: 8)**

[P.2] *Occupant-Centric Federated Cyber-Physical System for Building Management Arjunan, Pandarasamy*, *Proceedings of the 9th ACM Conference on Embedded Networked Sensor Systems (SenSys), PhD Forum, 2012*.

[P.1] *Fine-grained resource (electricity) management in buildings*, *Arjunan, Pandarasamy*, *Proceedings of the Fourth International Conference on Communication Systems and Networks (COMSNETS), 2012*.

INVITED TALKS

- *Outlier detection in big time series*, International E-Conference on Recent Developments in Science, Engineering and Information Technology, Madurai Kamaraj University, India. *Sep. 2020*
- *Introduction to Reproducible Research*, Department of Computer Science and Engineering, Manonmaniam Sundaranar University, Tirunelveli, India. *Mar.2020*
- *BEEM: Towards more accurate and explanatory building energy benchmarking for Singapore*, BEARS Symposium, Singapore. *Aug. 2019*
- *Data-driven Load Profiling and Benchmarking for Commercial Buildings*, BUDS Lab Workshop, National University of Singapore, Singapore. *Jul 2018*
- *SensorAct: A Privacy and Security Aware Federated Middleware for Building Management*, Synergy Lab, University of California, San Diego, USA. *Mar. 2013*
- *MELOS: A Low-Cost and Low-Energy Generic Sensing Attachment for Mobile Phones*, IGIT, GGSIP University, Delhi, India. *Jun. 2011*

HONORS AND AWARDS

- **IBM PhD Fellowship** for two consecutive years (July 2012 – June 2014).
- Certificate of *Honourable Mention*, Poster session, COMSNETS 2012.

SERVICES

Program Committee member: ACM BuildSys 2020.

Poster and Demo Co-chair: ACM BuildSys 2018.

Reviewer: ACM Transactions on Cyber-Physical Systems, ACM BuildSys 2012-13, ACM eEnergy 2013-14 and 2020, ICDCIT 2013, and CONECCT 2013.

Web chair: ACM BuildSys 2014-16, ACM eEnergy 2015, ACM SenSys 2016.

TEACHING

- Probability and Statistics
- System Management
- Mobile Computing
- Computer Networks

GRADUATE COURSES

- Advanced Algorithms
- Embedded Systems
- Adhoc Wireless Networks
- Fundamentals of Computer Security
- Advanced Research Methods
- Machine Learning (Coursera)
- Middleware Systems
- Mobile Computing
- Mobile and Wireless Network Security
- Technical Writing