

Srinivasan Iyengar

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Amherst, MA 01003 USA
- RESEARCH INTERESTS** Cyber-Physical Systems, Distributed Systems, Embedded Systems, Big Data Analytics on large-scale IoT data
- EDUCATION** **University of Massachusetts**, Amherst, Massachusetts USA
Ph.D. Candidate, Computer Science, August 2013 - December 2018 (expected)
 - Advisor: Prof. Prashant ShenoyM.S., Computer Science, August 2013 - December 2015
 - Advisor: Prof. Prashant Shenoy**College of Engineering**, Pune, Maharashtra India
B.Tech., Computer Science, July 2004 - June 2008
- PUBLICATIONS**
1. **Srinivasan Iyengar**, Stephen Lee, David Irwin, Prashant Shenoy, Benjamin Weil. *WattHome: A Data-driven Approach for Energy Efficiency Analytics at City-scale*. Proceedings of the 24th ACM Conference on Knowledge Discovery and Data Mining (*ACM SIGKDD*).
 2. **Srinivasan Iyengar**, Vijay Gurbani, Yu Zhou, Sameerkumar Sharma. *Opportunistic prefetching of cellular Internet of Things (cIoT) device contexts*. Proceedings of the 1st International Workshop on Edge Computing and Networking (ECN) co-located with (*IEEE ICCCN*).
 3. **Srinivasan Iyengar**, Sandeep Kalra, Anushree Ghosh, David Irwin, Prashant Shenoy, Benjamin Marlin. *Inferring Smart Schedules for Dumb Thermostats*. ACM Transactions on Cyber-Physical Systems (*ACM TCPS*) (to Appear)
 4. **Srinivasan Iyengar**, Stephen Lee, Daniel Sheldon, Prashant Shenoy. *SolarClique: Detecting Anomalies in Residential Solar Arrays*. Proceedings of the 1st ACM SIG-CAS Conference on Computing and Sustainable Societies (*ACM COMPASS*)
 5. Stephen Lee, **Srinivasan Iyengar**, David Irwin, Prashant Shenoy. *Distributed Rate Control for Smart Solar Arrays*. Proceedings of the 8th ACM International Conference on Future Energy Systems (*ACM eEnergy*).
 6. **Srinivasan Iyengar**, Navin Sharma, David Irwin, Prashant Shenoy, Krithi Ramamritham. *A Cloud-based Black Box Solar Predictor for Smart Homes*. ACM Transactions on Cyber-Physical Systems Volume 1 Issue 4 (*ACM TCPS*)
 7. David Irwin, **Srinivasan Iyengar**, Stephen Lee, Aditya Mishra, Prashant Shenoy, Ye Xu. *Enabling Distributed Energy Storage by Incentivizing Small Load Shifts*. ACM Transactions on Cyber-Physical Systems Volume 1 Issue 2 (*ACM TCPS*)

8. **Srinivasan Iyengar**, Stephen Lee, David Irwin, Prashant Shenoy. *Analyzing Energy Usage on a City-scale using Utility Smart Meters*. Proceedings of the 3rd ACM International Conference on Embedded Systems for Energy-Efficient Built Environments (*ACM BuildSys*).
9. Dong Chen, **Srinivasan Iyengar**, David Irwin, Prashant Shenoy. *SunSpot: Localizing Solar Arrays*. Proceedings of the 3rd ACM International Conference on Embedded Systems for Energy-Efficient Built Environments (*ACM BuildSys*).
10. Stephen Lee, **Srinivasan Iyengar**, David Irwin, Prashant Shenoy. *Shared Solar-powered EV Charging Stations: Feasibility and Benefits*. Proceedings of the 7th International Green and Sustainable Computing Conference (*IGSC*).
11. **Srinivasan Iyengar**, David Irwin, Prashant Shenoy. *Non-Intrusive Model Detection: Automated Modeling of Residential Electrical Loads*. Proceedings of the 7th ACM International Conference on Future Energy Systems (*ACM eEnergy*).
12. **Srinivasan Iyengar**, Sandeep Kalra, Anushree Ghosh, David Irwin, Prashant Shenoy, Benjamin Marlin. *iProgram: Inferring Smart Schedules for Dumb Thermostats*. Proceedings of the 2nd ACM International Conference on Embedded Systems for Energy-Efficient Built Environments (*ACM BuildSys*).
13. **Srinivasan Iyengar**, Navin Sharma, David Irwin, Prashant Shenoy, Krithi Ramamritham. *SolarCast: a cloud-based black box solar predictor for smart homes*. Proceedings of the 1st ACM Conference on Embedded Systems for Energy-Efficient Buildings (*ACM BuildSys*).
14. **Srinivasan Iyengar**, Shirish Subhash Karande, Sachin Lodha. *English to Hindi Translation Protocols for an Enterprise Crowd*. Proceedings of the 1st AAAI Conference on Human Computation and Crowdsourcing (*AAAI HCOMP*).
15. Pattisapu Nikhil Priyatam, **Srinivasan Iyengar**, Krish Perumal, Vasudeva Varma. *Dont Use a Lot When Little Will Do: Genre Identification Using URLs*. Journal for Research in Computing Science.

PATENTS

1. **US20120041989 A1, EP2420967 A1, 2295/MUM/2010** - *Generating assessment data*
2. **US9356966 B2, EP2779044 A1, 778/MUM/2013** - *System and method to provide management of test data at various lifecycle stages*
3. **US20150220864A1, EP2905729A1** - *System and method for providing crowd sourcing platform for task allocation*
4. **680/MUM/2012** - *Stratified Sampling of a Database*
5. **2169/MUM/2013** - *A system and method for implementing a privacy setting providing a defense against identifying a user*
6. **2708/MUM/2013** - *Managing cookies in computing devices*
7. **45/MUM/2014** - *System and method for providing transliteration by leveraging arpabet phonemes*
8. **42/MUM/2014** - *System and method for providing crowd sourcing platform for language translation*

RESEARCH
EXPERIENCE

Research Assistant
University of Massachusetts, Amherst, Massachusetts USA

Jan 2014 - present

- Thesis on “Scalable data-driven modeling and analytics for smart buildings”.
- Designed anomaly detection algorithms for Cyber-Physical Systems (CPS) in the energy context.
- Performed big-data analytics on large-scale sensor data using techniques from machine learning, optimization, and time-series analysis.
- Designed and implemented data-driven systems that leverage data from IoT devices.
- Explored modeling and characterization of workloads in CPS domain.

TEACHING
EXPERIENCE

All teaching experience at the University of Massachusetts Amherst.

- **Teaching Assistant - CS220: Programming Methodology** **Sep - Dec 2013**
Duties included holding office hours and leading weekly classroom discussion.
- **Workshop Organization and Assistance**
 1. *Home Automation Workshop* **Apr 2015**
 2. *Wearables Automation Workshop* **Oct 2015**
 3. *Arduino Workshop* **Oct 2016**
 4. *WiFi LED Workshop* **Oct 2017**Helped organize the workshop open to UMass undergrads. Helped solve technical issues during the session.
- **Guest Lecturer**
“*Pervasive Computing, IoT and Smart Buildings*”,
CS677: Distributed Operating Systems. Spring 2018 **Apr 2018**

WORK
EXPERIENCE

Nokia Bell Labs, Naperville, Illinois USA

Summer Research Intern

Jun - Aug 2017

- Modeled IoT device traffic patterns using machine learning techniques
- Worked on latency reduction in 5G mobile network operations by implemented smart prefetching and replacement schemes on IoT device contexts.

Tata Research Development and Design Centre, Pune, Maharashtra India

Research Associate

Aug 2008 - Aug 2013

- Involved in conceptualization, design and development of products in data privacy and performance test automation. Also, created valuable IP in terms of patents and publications.

- Involved in conceptualization and deployment of a crowdsourcing initiative to get English to Hindi translation.

SERVICE

- **Technical Program Committee member:** IPTComm 2018
- **External Reviewer:** ACM eEnergy 2018, AAAI 2018, IEEE PowerAfrica 2018, ACM SIGCOMM 2018

AWARDS

- **1st prize** in the third annual **UMass Hackathon 2015** (> 500 participants)
- **Student Travel grants** - ACM SIGKDD 2018 (London), ACM BuildSys 2016 (Stanford), CompSust 2016 (Cornell), ACM eEnergy 2016 (Waterloo), Mathematics of Planet Earth 2014 - Workshop on Data-aware Energy Use (San Diego)

REFERENCES

Prof. Prashant Shenoy

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