Nipun **Batra**

PhD. Candidate

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Education

Indraprashta Institute of Information Technology Delhi		*Delhi, India*
Ph.D. Candidate, Computer Science (GPA 9.3/10)		*Jan 2012-Present*
Delhi College of Engineering		*Delhi, India*
Bachelors of Engineering (Hons.), Computer Science (GPA 9/10)		*Jul 2007 -April 2011*

Honours & Awards

2016	**Finalist in UChichago Delhi urban challenge**, Acceptance rate: 3.6%	*Delhi, India*
2016	**3rd position in IoT hackathon**, Microsoft Research Summer School	*Bangalore, India*
2016	**Google, Microsoft Research and KDD travel grant**, KDD 2016	*San Francisco, USA*
2015	**Best presentation award**, Sensys 2015 Doctoral Colloqium	*Seoul, South Korea*
2015	**ACM travel grant**, Sensys 2015	*Seoul, South Korea*
2014	**Best demo award**, Buildsys 2014	*Memphis, USA*
2014	**ACM travel grant**, E-Energy 2014	*Cambridge, UK*
2012	**PhD fellowship**, TCS Research and Development	
2012	**Travel and lodging grant**, Microsoft Research Summer School	*Bangalore, India*
2010	**Systems engineering prize barrel**, AUVSI's student UAS competition	*Maryland, USA*
2009	**Young scientist travel grant**, Department of Science and Technology (Govt. of India)	*Delhi, India*
2009	**Director's award for best effort**, AUVSI's student UAS competition	*Maryland, USA*

Research Experience

IIIT Delhi	*Delhi, India*
Graduate Research Assistant	*Jan. 2012 - Present*
University of Virginia (under Prof. Kamin Whitehouse)	*Charlottesville, Virginia, USA*
Visiting Researcher	*Jul. 2014 - Apr. 2015*
Linux Android Network Systems Lab, Delhi College of Engineering	*Delhi, India*
Undergraduate Research Intern	*Dec. 2010 - Jun. 2011*
Unmanned Aircraft Systems Lab, Delhi College of Engineering	*Delhi, India*
Undergraduate Research Intern	*Dec. 2008 - Jul. 2010*

Teaching Experience

Computer Networks (under Prof. Dheeraj Sanghi)	*IIIT Delhi, India*
Head TA	*Winter 2016*
IIITD media team (under Prof. Dheeraj Sanghi)	*IIIT Delhi, India*
Research media manager	*Monsoon 2015*
Embedded Systems (under Dr. Amarjeet Singh)	*IIIT Delhi, India*
TA	*Winter 2013*
Introduction to Programming (under Dr. Gaurav Gupta)	*IIIT Delhi, India*
Head TA	*Monsoon 2012*

Industrial Experience

Royal Bank of Scotland	*Gurgaon, India*
Software Analyst	*Jun. 2011 - Nov. 2011*
Goldman Sachs	*Bangalore, India*
Engineering intern	*Jun. 2010 - Aug. 2010*

Invited Talks

2016	**Stanford University**, Towards energy disaggregation for a 100 million homes	*California, USA*
2015	**University of Pennsylvania**, If you can measure it, can you improve it?	*Philadelphia, USA*
2015	**Carnegie Mellon University**, If you can measure it, can you improve it?	*Pittsburgh, USA*

Professional Service

2016	**Steering committee**, 3rd International NILM workshop	*Canada*
2014	**Program committee**, 2nd International NILM workshop	*Austin, Texas, USA*
2012-16	**External reviewer**, Transactions on Mobile Computing, Buildsys 2015, Ubicomp 2015, E-Energy 2015, E-Energy 2014, ASONAM 2013, E-Energy 2013, ICDM 2013, Buildsys 2013	

Publications(Click <u>here</u> for Google Scholar Profile)

Selected Peer-reviewed papers

2016   [S.5]   **Gemello: Creating a Detailed Energy Breakdown from just the Monthly Electricity Bill**
Nipun Batra, Amarjeet Singh, Kamin Whitehouse
KDD 2016. San Francisco, USA **(Acceptance rate: 19%).**

2015   [S.4]   **If You Measure It, Can You Improve It? Exploring The Value of Energy Disaggregation**
Nipun Batra, Amarjeet Singh, Kamin Whitehouse
Buildsys 2015. Seoul, Korea **(Acceptance rate: 29%).**

2014   [S.3]   **NILMTK: An Open Source Toolkit for Non-intrusive Load Monitoring**
Nipun Batra, Jack Kelly, Oliver Parson, Haimonti Dutta, William Knottenbelt, Alex Rogers, Amarjeet Singh, and Mani Srivastava
ACM eEnergy 2014. Cambridge, UK **(Acceptance rate: 20%, 70+ citations)**

2013   [S.2]   **It's Different: Insights into home energy consumption in India**
Nipun Batra, Manoj Gulati, Amarjeet Singh, and Mani Srivastava
Buildsys 2013, Rome, Italy **(40+ citations)**

2012   [S.1]   **SensorAct: A Privacy and Security Aware Federated Middleware for Building Management**
Pandarasamy Arjunan, **Nipun Batra**, Haksoo Choi, Amarjeet Singh, Pushpendra Singh, and Mani B. Srivastava
Buildsys 2012, Waterloo, Canada

Other Peer-reviewed papers

2015   [O.3]   **Dataport and NILMTK: A Building Data Set Designed for Non-intrusive Load Monitoring**
Oliver Parson, Grant Fisher, April Hersey, **Nipun Batra**, Jack Kelly, Amarjeet Singh, William Knottenbelt, Alex Rogers
GlobalSip, Orlando, FL, USA

2013   [O.2]   **INDiC: Improved Non-Intrusive load monitoring using load Division and Calibration**
Nipun Batra, Haimonti Dutta and Amarjeet Singh
ICMLA 2013, Miami, USA

2013   [O.1]   **Experiences with Occupancy Based Building Management Systems**
Nipun Batra, Pandarasamy Arjunan, Amarjeet Singh and Pushpendra Singh
ISSNIP 2013, Melbourne, Australia

Posters, Demos, and Short papers

2015   [P.3]   **Non Intrusive Load Monitoring: Systems, Metrics and Use Cases**
Nipun Batra
Sensys 2015 **(Best presentation award)**

| 2014 | [P.2] | **NILMTK v0. 2: A Non-intrusive Load Monitoring Toolkit for Large Scale Data Sets** |

Jack Kelly, **Nipun Batra**, Oliver Parson, Haimonti Dutta, William Knottenbelt, Alex Rogers, Amarjeet Singh, and Mani Srivastava

Buildsys 2014 **(Best demo award)**

2014   [P.1]   **Bits and watts: improving energy disaggregation performance using power line communication modems**

Nipun Batra, Manoj Gulati, Puneet Jain, Kamin Whitehouse and Amarjeet Singh

Buildsys 2014

TECHNICAL REPORTS

2015   [T.4]   **How good is good enough? Re-evaluating the bar for energy disaggregation**

Nipun Batra, Rishi Baijal, Amarjeet Singh, Kamin Whitehouse

2015   [T.3]   **Neighbourhood NILM: A Big-data Approach to Household Energy Disaggregation**

Nipun Batra, Amarjeet Singh, Kamin Whitehouse

2014   [T.2]   **A comparison of non-intrusive load monitoring methods for commercial and residential buildings**

Nipun Batra, Oliver Parson, Mario Berges, Amarjeet Singh, Alex Rogers

2014   [T.1]   **Data Driven Energy Efficiency in Buildings**

Nipun Batra, Amarjeet Singh, Pushpendra Singh, Haimonti Dutta, Venkatesh Sarangan, and Mani Srivastava

Mentoring and students

2015	**Rishi Baijal**, Non-intrusive occupancy detection	*Bachelor's thesis*
2013	**Ishaan Malhotra**, Smart meter based energy disaggregation	*Bachelor's thesis*
2013	**Akshit Gupta**, Appliance energy modelling	*Independent project*
2013	**Ayushi Aggarwal**, Reproducible energy disaggregation	*Independent project*