Nipun **Batra**

POSTDOC. RESEARCHER

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Education

Indraprastha 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

2017	**AAAI travel grant**, AAAI 2017		*San Francisco, USA*
2016	**Best video nominee**, KDD 2016, Acceptance rate: 3.1%		*San Francisco, USA*
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

University of Virginia	*Charlottesville, USA*
POSTDOC. RESEARCHER	*Mar. 2017 - Present*
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

2018	**TPC chair**, 4th International NILM workshop	*Austin, Texas, USA*
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 here for Google Scholar Profile)

Selected Peer-reviewed papers

2018   [S.7]   **Transferring Decomposed Tensors for Scalable Energy Breakdown across Regions**
Nipun Batra, Yiling Jia, Hongning Wang, Kamin Whitehouse
AAAI 2018. New Orleans, USA **(Acceptance rate: 25%)**.

2017   [S.6]   **Matrix Factorisation for Scalable Energy Breakdown**
Nipun Batra, Hongning Wang, Amarjeet Singh, Kamin Whitehouse
AAAI 2017. San Francisco, USA **(Acceptance rate: 25%)**.

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%, 140+ 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 **(60+ 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   [0.3]   **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	[0.2]	**INDiC: Improved Non-Intrusive load monitoring using load Division and Calibration** **Nipun Batra**, Haimonti Dutta and Amarjeet Singh ICMLA 2013, Miami, USA
2013	[0.1]	**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

2017	**Anmol Singh**, Factorisation for scalable energy breakdown	*Independent project*
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*