Nipun **Batra**

POSTDOC SCHOLAR

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Education

Indraprastha Institute of Information Technology Delhi   *Delhi, India*

PH.D., COMPUTER SCIENCE (GPA 9.3/10)   *Jan 2012-March 2017*

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, Virginia, USA*

POSTDOC RESEARCHER   *Mar. 2017 - Present*

IIIT Delhi   *Delhi, India*

GRADUATE RESEARCH ASSISTANT   *Jan. 2012 - Mar. 2017*

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	**IBM Research**, Towards practical energy breakdown	*Delhi, India*
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 here for Google Scholar Profile)

SELECTED PEER-REVIEWED PAPERS

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%, 90+ 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	[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 Machines 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*