

# DHIVYA ESWARAN

Carnegie Mellon University  
6008 Gates Hillman Center  
5000 Forbes Avenue  
Pittsburgh, PA 15213, USA

Email: [deswaran@cs.cmu.edu](mailto:deswaran@cs.cmu.edu)  
www: <https://www.cs.cmu.edu/~deswaran>  
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## EDUCATION

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- **PhD** in Computer Science *August 2015 - present*  
**Carnegie Mellon University**, Pittsburgh, USA  
Advisor: Prof. Christos Faloutsos  
Research: Graph and time-series mining, Anomaly detection, Machine Learning
- **BTech (with Honors)** in Computer Science and Engineering *August 2011 - May 2015*  
**Indian Institute of Technology Madras**, Chennai, India  
**CGPA: 9.77/10**  
Advisor: Prof. Sutanu Chakraborti  
Thesis: Leveraging Structure to Improve Concept Networks and Concept Lattices

## POSITIONS

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- **Amazon**, Palo Alto, USA *May 2018 - August 2018*  
Research Intern, AWS Artificial Intelligence Lab. Mentors: Nina Mishra, Yonatan Naamad  
Research: Early warning of abnormal health conditions
- **Amazon**, Palo Alto, USA *May 2017 - August 2017*  
Research Intern, Core Machine Learning. Mentors: Nina Mishra, Sudipto Guha  
Research: Anomaly detection in streaming graphs
- **Facebook**, Menlo Park, USA *May 2016 - August 2016*  
Research Intern, Core Data Science. Mentors: Smriti Bhagat, Stanislav Funiak, Aude Hoefflner  
Research: Matching graphs with nodal attributes
- **Toyota Technological Institute**, Chicago, USA *May 2015 - August 2015*  
Research Intern, CS Department. Mentors: Mohit Bansal, Kevin Gimpel, Karen Livescu  
Research: Learning word embeddings from multiple languages
- **Microsoft Research**, Redmond, USA *May 2014 - August 2014*  
Research Intern, Contextual Learning, User Experience and Search. Mentor: Paul Bennett  
Research: Webpage classification using website topical cohesion

## AWARDS & DISTINCTIONS

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10. Snap Graduate Research Fellowship, 2019
9. Symantec Graduate Research Fellowship Finalist, 2019
8. ECML-PKDD Best Student Data Mining Paper (Runner-Up), 2018
7. Travel awards: IEEE ICDM 2018, ACM SIGKDD 2018, CRA-Women Graduate Student Cohort 2016, Xerox Research Center India Open 2014
6. O.P. Jindal Engineering and Management Scholarship, 2011 & 2012
5. Aditya-Birla Scholarship Finalist, 2011 (one of 25 candidates across India)
4. All India Rank 96 in IIT-Joint Entrance Examination, 2011
3. All India Rank 24 in All India Engineering Entrance Examination, 2011
2. Kishore Vaigyanik Protsahan Yojana Scholarship, 2011
1. Tamil Nadu State Rank 2, Regional Mathematics Olympiad, 2010

## PUBLICATIONS

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### Refereed Conference Publications

11. **Dhivya Eswaran**, Christos Faloutsos. *SedanSpot: Detecting Anomalies in Edge Streams*, ICDM 2018.
10. Bryan Hooi, Leman Akoglu, **Dhivya Eswaran**, Amritanshu Pandey, Marko Jereminov, Larry Pileggi, Christos Faloutsos. *ChangeDAR: Online Localized Change Detection for Sensor Data on a Graph*, CIKM 2018.
9. **Dhivya Eswaran**, Reihaneh Rabbany, Artur Dubrawski, Christos Faloutsos. *Social-Affiliation Graphs: Patterns and the SOAR Model*, ECML-PKDD 2018.
8. Bryan Hooi, **Dhivya Eswaran**, Hyun Ah Song, Amritanshu Pandey, Marko Jereminov, Larry Pileggi, Christos Faloutsos. *GridWatch: Sensor Placement and Anomaly Detection in the Electrical Grid*, ECML-PKDD 2018.  
**Best Student Data Mining Paper (Runner-Up)**
7. Nikhil Gupta, **Dhivya Eswaran**, Neil Shah, Leman Akoglu, Christos Faloutsos. *Beyond Anomaly Detection: LookOut for Pictorial Explanation*, ECML-PKDD 2018.
6. **Dhivya Eswaran**, Christos Faloutsos, Sudipto Guha, Nina Mishra. *SpotLight: Detecting Anomalies in Streaming Graphs*, KDD 2018.
5. Reihaneh Rabbany, **Dhivya Eswaran**, Christos Faloutsos, Artur Dubrawski. *Beyond Assortativity: Proclivity Index for Attributed Networks*, PAKDD 2017.
4. **Dhivya Eswaran**, Stephan Günnemann, Christos Faloutsos, Disha Makhija, Mohit Kumar. *ZooBP: Belief Propagation for Heterogeneous Networks*, VLDB 2017.
3. Kijung Shin, Euiwoong Lee, **Dhivya Eswaran**, Ariel D. Procaccia. *Why You Should Charge Your Friends for Borrowing Your Stuff*, IJCAI 2017.
2. **Dhivya Eswaran**, Stephan Günnemann, Christos Faloutsos. *The Power of Certainty: A Dirichlet-Multinomial Model for Belief Propagation*, SDM 2017.
1. **Dhivya Eswaran**, Paul Bennett, Joseph Pfeiffer III. *Modeling Website Topic Cohesion at Scale to Improve Webpage Classification*, SIGIR 2015.

### Refereed Workshop Publications

2. Nikhil Gupta, **Dhivya Eswaran**, Neil Shah, Leman Akoglu, Christos Faloutsos. *Beyond Anomaly Detection: LookOut for Pictorial Explanation*, KDD 2018 (ODD workshop).
1. Ditty Mathew, **Dhivya Eswaran**, Sutanu Chakraborti. *Creating Pedagogical Views from an Encyclopedic Resource*, NAACL 2015 (BEA10 workshop).

## GRADUATE-LEVEL COURSEWORK

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### At Carnegie Mellon University

- *Intermediate Statistics* with Prof. Larry Wasserman
- *Algorithms in the Real World* with Prof. Anupam Gupta and Prof. Guy Blelloch
- *Multimedia Databases and Data Mining* with Prof. Christos Faloutsos
- *Graduate Artificial Intelligence* with Prof. Tuomas Sandholm and Prof. Zico Kolter
- *Spectral Graph Theory* with Prof. Gary Miller
- *Programming Language Semantics* with Prof. Stephen Brookes

### At Indian Institute of Technology Madras

- *Data Mining* with Prof. Balaraman Ravindran and Prof. Sayan Ranu
- *Introduction to Machine Learning* with Prof. Balaraman Ravindran
- *Social Network Analysis* with Prof. Balaraman Ravindran
- *Reinforcement Learning* with Prof. Balaraman Ravindran
- *Topics in Design and Analysis of Algorithms* with Prof. Pandu Rangan
- *Geometry and Photometry-based Computer Vision* with Prof. Anurag Mittal
- *Digital Video Processing* with Prof. Anurag Mittal

- *Natural Language Processing* with Prof. Sutanu Chakraborti
- *Memory-based Reasoning in Artificial Intelligence* with Prof. Sutanu Chakraborti
- *Optimization Methods in Signal Processing and Communication* with Prof. Krishna Jagannathan

## ACTIVITIES

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### Academic Service & Mentorship

- Reviewer, Journal of Machine Learning Research 2018
- Mentored Soumya Wadhwa (CS MS student at CMU), 2017-18
- Member of Speakers' Club at Carnegie Mellon University (CMU), 2017-present
- Program Committee for "Misinformation and Misbehavior Mining on the Web" Workshop, WSDM 2017
- Mentored Nitin Chandra Badam (CS MS student at CMU), 2016-17
- Mentor in Avanti Fellows, 2014-15

### Teaching

- Teaching assistant for *Algorithms for Big Data*, by Prof. David Woodruff, in spring 2017
- Teaching assistant for *Practical Data Science*, by Prof. Zico Kolter, in fall 2016

### Funding

- Contributed towards Flipkart faculty grant (\$50,000) with Bryan Hooi, Neil Shah and Christos Faloutsos

### Invited Talks

- *ZooBP: Belief Propagation in Heterogeneous Networks*, CyLab Partners conference, September 2017
- *The Power of Certainty: A Dirichlet-Multinomial Model for Belief Propagation*, Technical University of Munich, September 2017, hosted by Stephan Günnemann

### Others

- Vice-President, Indian Graduate Student Association at CMU, 2016-17
- Cultural Chair, Indian Graduate Student Association at CMU, 2015-16
- Co-ordinator of technical fests (Shaastra, Exebit) at Indian Institute of Technology Madras, 2012-14