Sathappan Muthiah
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Education

Summer 2014 - Spring 2018	**PhD Student** in Computer Science, Virginia Tech, USA. **GPA:** 3.80/4.00 **Advisor** Dr. Naren Ramakrishnan
Spring 2012 - Summer 2014	**MS.** in Computer Science, Virginia Tech, USA. **GPA:** 3.82/4.00 **Advisor** Dr. Naren Ramakrishnan
2007 - 2011	**B.Tech.** in Information Tech., National Institute of Tech., Bhopal, India. **GPA:** 8.65/10

Professional Experience

- **Virginia Tech** Arlington, VA
  GRA, Discovery Analytics Center. Advisor: Dr. Naren RamakrishnanSpring 2012 - Spring 2018
  - **IARPA FUNGCAT**: Working on Threat identification and Protein Function Prediction (PFP) of gene sequences.
  - **IARPA MERCURY**: Worked on model fusion on the IARPA funded MERCURY project in association with USC Information Sciences Institute
  - **IARPA OSI**: Worked on Civil Unrest Forecasting for IARPA funded EMBERS-"Early Model Based Event Recognition using Surrogates". Create Streaming ingestion and enrichment modules for News, Blogs and Facebook events. Implemented big data unrest forecasting pipeline in python over EMBERS AWS cluster framework.Collaborated with several institutes such as NDSSL (at VT), University of Maryland, CACI, Basis Tech., University of California-San Diego and San Diego State University
- **Indian Institute of Scientific Education and Research** Kolkata, IN
  Intern, mentored by Dr. Prashanta Panigrahi *Nov-Jan 2009*
  - Worked in the research field of Quantum Computation and Quantum Information.Studied finite dimensional systems and computed their concurrence to check the entanglement properties of a few multiparty states that have been thoroughly understood
- **National Institute of Oceanography** Goa, IN
  Intern, mentored by Dr.Biswajit Chakraborty *May-June 2010*
  - Worked on "Forward modeling of Time-Dependent seafloor acoustic backscatter". Various data processing and cleansing techniques were applied by me and my teammate to process data from the acoustic backscatter so that various machine learning algorithms can be applied. Used the Simplex method as a convergence test to estimate parameters for a mathematical model being verified using experimental data.

Activities

IP	P. Butler, S. Muthiah, and N. Ramakrishnan. Alert Generation from Multiple Streams, 2016. VTIP 17-047

PC Member	KDD 2018 Program Committee Member
PC Member	ASONAM 2018 PC Member

Publications

Current Publications

2017	D. K. Gupta, S. Muthiah, D. Mares, and N. Ramakrishnan. Forecasting Civil Strife: An Emerging Methodology. In *HUSO The Third International Conference on Human and Social Analytics*, 2017
2016	P. Chakraborty, S. Muthiah, R. Tandon, and N. Ramakrishnan. Hierarchical Quickest Change Detection via Surrogates. *arXiv preprint arXiv:1603.09739*, 2016
	S. Muthiah, B. Huang, J. Arredondo, D. Mares, L. Getoor, G. Katz, and N. Ramakrishnan. Capturing planned protests from open source indicators. *AI Magazine*, 37(2), 2016
	S. Muthiah, P. Butler, R. P. Khandpur, P. Saraf, N. Self, A. Rozovskaya, L. Zhao, J. Cadena, C.-T. Lu, A. Vullikanti, A. Marathe, K. Summers, G. Katz, A. Doyle, J. Arredondo, D. K. Gupta, D. Mares, and N. Ramakrishnan. Embers at 4 years: Experiences operating an open source indicators forecasting system. In *Proceedings of the 22Nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, KDD '16, pages 205–214, New York, NY, USA, 2016. ACM
	Y. Ning, S. Muthiah, H. Rangwala, and N. Ramakrishnan. Modeling precursors for event forecasting via nested multi-instance learning. In *Proceedings of the 22Nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, KDD '16, pages 1095–1104, New York, NY, USA, 2016. ACM
2015	S. Muthiah, B. Huang, J. Arredondo, et al. Planned Protest Modeling in News and Social Media. In *AAAI Conference on Artificial Intelligence, January 25-30, 2015*, pages 3920–3927, 2015
	J. Schlachter, A. Ruvinsky, L. A. Reynoso, S. Muthiah, and N. Ramakrishnan. Leveraging topic models to develop metrics for evaluating the quality of narrative threads extracted from news stories. *Procedia Manufacturing*, 3:4028–4035, 2015
	Y. Ning, S. Muthiah, R. Tandon, and N. Ramakrishnan. Uncovering news-twitter reciprocity via interaction patterns. In *Advances in Social Networks Analysis and Mining (ASONAM), 2015 IEEE/ACM International Conference on*, pages 1–8. IEEE, 2015
2014	N. Ramakrishnan, P. Butler, S. Muthiah, N. Self, et al. 'Beating the news' with EMBERS: Forecasting Civil Unrest using Open Source Indicators. In *International Conference on Knowledge Discovery and Data Mining, KDD, August 24 - 27, 2014*, pages 1799–1808, 2014
	A. Doyle, G. Katz, K. Summers, C. Ackermann, I. Zavorin, Z. Lim, S. Muthiah, P. Butler, N. Self, L. Zhao, et al. Forecasting significant societal events using the embers streaming predictive analytics system. *Big Data*, 2(4):185–195, 2014

Participation in Conferences

- **KDD 2016**, 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data

Mining, San Francisco, USA, August 2016.
- **KDD 2015**, 21st ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, Sydney, Australia, August 2015.
- **IAAI 2014**, 27th Conference on Innovative Applications of Artificial Intelligence, Austin, USA, Jan 2014.

Awards and Honors

Award	Student Travel Award, KDD	2016
	Pratt Fellowship	2015
	Deployed Application Paper Award, IAAI	2014

Technical Skills

Programming **Python**, **C/C++**, R, Java, Matlab, HTML/PHP

Frameworks NOSQL: MongoDB, ElasticSearch, Tensorflow, MapReduce

References

- **Dr. Naren Ramakrishnan**
  Thomas L. Phillips Professor of Engineering
  Directory, Discovery Analytics Center
  Department of Computer Science
  Virginia Tech
  email: narenATcsDOTvtDOTedu
- **Dr. Patrick Butler**
  Senior Research Associate
  Discovery Analytics Center
  Virginia Tech
  email: pabutlerATvtDOTedu
- **Dr. Chang-Tien Lu**
  Professor
  Associate Directory, Discovery Analytics Center
  Department of Computer Science
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