

SUNIL GANDHI

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EDUCATION

- CURRENT** Ph.D. in COMPUTER SCIENCE
University of Maryland Baltimore County
Thesis: "Artifact detection and removal from EEG data"
Advisor: Dr. Tim Oates
- MAY 2015** Masters of Science in COMPUTER SCIENCE
University of Maryland Baltimore County
Thesis: "A Generative Model for Time Series based on Multiple Normal Distributions"
Advisor: Dr. Tim Oates | GPA: 4/4
- MAY 2012** Bachelor of Engineering in COMPUTER ENGINEERING
Pune Institute of Computer Technology
BE Project: "On demand loading of code in MMUless embedded system"
GPA: 3.3/4

WORK EXPERIENCE

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| Current
JAN 2013 | Research Assistant at UNIVERSITY OF MARYLAND BALTIMORE COUNTY
<i>Cognition, Robotics, and Learning (CORAL) lab</i>
Developed Symbolic Trajectory Analysis and Visualization System (STAVIS), a system analysis of trajectories using grammar induction algorithm and SAX representation. Also worked on project for noticing changes in the utility of learned knowledge as detecting changes in streaming data. This will be helpful in monitoring performance of neural machine learning algorithms |
| JUN-OCT 2014 | Research Intern at XEROX RESEARCH CENTER EUROPE, France
Worked on inferring templates in documents using grammar induction algorithms. We used document classification as evaluation metric for usefulness of grammar learnt from documents. |

PUBLICATIONS

- **Sunil Gandhi**, Tim Oates, Tinoosh Mohsenin, David Hairston. "Denoising Time Series Data Using Asymmetric Generative Adversarial Networks." In Pacific-Asia Conference on Knowledge Discovery and Data Mining, 2018.
- Pavel Senin, Jessica Lin, Xing Wang, Tim Oates, **Sunil Gandhi**, Arnold P. Boedihardjo, Crystal Chen, and Susan Frankenstein. "Grammarviz 3.0: Interactive discovery of variable-length time series patterns." In ACM Transactions on Knowledge Discovery from Data (TKDD), 2018.
- Tilak Neha, **Sunil Gandhi**, Tim Oates. "Visual entity linking." In International Joint Conference on Neural Networks (IJCNN), 2017
- Ali Jafari, **Sunil Gandhi**, Harsha Konuru, David Hairston, Tim Oates, Tinoosh Mohsenin. "An EEG Artifact Identification Embedded System Using ICA and Multi-Instance Learning" In Ultra-efficient Approaches Enabling Long-term, Mobile EEG for Brain Monitoring Session at ISCAS 2017.

- Xing Wang, Jessica Lin, Pavel Senin, Tim Oates, **Sunil Gandhi**, Arnold Boedihardjo Crystal Chen, Susan Frankenstein. "RPM: Representative Pattern Mining for Efficient Time Series Classification." In 19th International Conference on Extending Database Technology (EDBT) 2016.
- Abhay Kashyap, Lushan Han, Roberto Yus, Jennifer Sleeman, Taneeya Satyapanich, **Sunil Gandhi** and Tim Finin. "Robust Semantic Text Similarity Using LSA, Machine Learning, and Linguistic Resources." In Language Resources and Evaluation, March 2016.
- **Sunil Gandhi**. "A generative model for time series based on multiple normal distributions." Masters Thesis at University of Maryland Baltimore County. May 2015.
- **Sunil Gandhi**, Tim Oates, Arnold Boedihardjo, Crystal Chen, Jessica Lin, Pavel Senin, Susan Frankenstein, and Xing Wang. "A Generative Model For Time Series Discretization Based On Multiple Normal Distributions." In Proceedings of the 8th Workshop on Ph.D. Workshop in Information and Knowledge Management (PIKM '15). ACM, New York, NY, USA, 19-25.
- Senin, Pavel, Jessica Lin, Xing Wang, Tim Oates, **Sunil Gandhi**, Arnold P. Boedihardjo, Crystal Chen, and Susan Frankenstein. "Time series anomaly discovery with grammar-based compression." In Proceedings of 18th International Conference on Extending Database Technology (EDBT). Brussels, Belgium. Mar 26, 2015.
- Kashyap, Abhay, Lushan Han, Roberto Yus, Jennifer Sleeman, Taneeya Satyapanich, **Sunil Gandhi**, and Tim Finin. "Meerkat mafia: Multilingual and cross-level semantic textual similarity systems." In Proceedings of the 8th International Workshop on Semantic Evaluation, pp. 416-423. Association for Computational Linguistics, 2014.
- Senin, Pavel, Jessica Lin, Xing Wang, Tim Oates, **Sunil Gandhi**, Arnold P. Boedihardjo, Crystal Chen, Susan Frankenstein, and Manfred Lerner. "GrammarViz 2.0: a tool for grammar-based pattern discovery in time series." In Machine Learning and Knowledge Discovery in Databases, pp. 468-472. Springer Berlin Heidelberg, 2014.
- Tim Oates, Arnold Boedihardjo, Jessica Lin, Crystal Chen, Susan Frankenstein, and **Sunil Gandhi**. "Motif discovery in spatial trajectories using grammar inference." In Proceedings of ACM International Conference on Information and Knowledge Management (CIKM). San Francisco, CA. Oct 27, 2013.
- **Sunil Gandhi**, Swapnil Khorate, Chetan Pachange, Mandar Vaidya. "On-demand loading of code in MMUless embedded systems". Undergraduate Thesis at Pune Institute of Computer Technology May 2012.

ACADEMIC PROJECTS

- **Visual cocktail party problem**
The goal of the project is to develop an algorithm that focuses on specific person's voice that is selected from the video of the conversation. In this work we propose a novel deep neural network that solves visual cocktail party by learning features from two modalities, audio and video.
- **Automating detection of change in distribution in data streams**
Used A-distance measure to detect changes in data stream generated by neural networks and showed the effect of change of its parameters. The same can be used to monitor performance of machine learning algorithms.
- **Gossip based aggregation on a distributed system using Erlang**
Created distributed system and calculated max, min, average and median of data at each node using gossip protocol. This system can be used for faster ($O(\log n)$) dissemination of information in a distributed system