Aniruddha Basak

aniruddha.digital@gmail.com,   Phone: (650) 391-5348
www.linkedin.com/in/aniruddha-basak-31280923/
Google Scholar: https://goo.gl/PZUKuo

EXPERIENCE

- **Amazon - Applied Scientist**, Seattle, WA   Nov 2017 - Present
  Developing "truly smart" features for Alexa SmartHome customers to deliver safer, more convenient, and energy efficient home. Built Alexa Hunches to remind customers about anomalous appliances, and Setup Hunches to help configure smart home.

- **Google - Software Development Intern**, New York, NY   May 2014 - Aug 2014
  Developed a framework to predict verifiability of new businesses found from google-search query logs. This would make google maps more populated with recently opened businesses.

- **Google - Software Development Intern**, Pittsburgh, PA   May 2013 - Aug 2013
  Worked on feature selection for sparse high dimensional data. Developed a system to achieve similar (or sometimes better) classification accuracy with significantly smaller feature set.

- **Expedia - Software Development Intern**, Bellevue, WA   June 2012 - Aug 2012
  Worked on Hotel Clustering using "user clicks" (not using hotel properties at all) to improve recommendations. Implemented the clustering process on Expedia's Hadoop platform.

- **KANGAL** (Kanpur Genetic Algorithms Laboratory),
  Indian Institute of Technology, Kanpur.   July 2010 - Aug 2010

  Project Investigator: Dr Kalyanmoy Deb.
  Study of Real Coded Genetic Algorithm and its comparison with Differential Evolution.

EDUCATION

- *MS/PhD*, Electrical and Computer Engineering
  Carnegie Mellon University, US   2011 - 2017
  Thesis: Scalable Bayesian Network Learning and its Applications
  Advisor: Ole J. Mengshoel

- *Bachelor of Engineering,* Electronics and Telecommunication Engg.   2007 - 2011
  Jadavpur University, Kolkata, India

AWARDS

Leo Finzi Memorial Fellowship: CMU ECE department's endowed fellowship awards 2015/2016

TECHNICAL SKILLS

Languages: Python, C++, R, Java, C, MATLAB, Scala, Visual Basic
Software and Frameworks: Apache Spark, Apache Hadoop, CUDA, OpenMP, Shell scripting, Various machine learning libraries in R, Python, C++, and MATLAB.

PUBLICATIONS   *International Conference Publications :*

1. **Aniruddha Basak**, Kamalika Das, Ole J. Mengshoel. CADDeLaG: Framework for distributed anomaly detection in large dense graph sequences. 2018. arXiv:1802.05421

2. **Aniruddha Basak**, Ole J. Mengshoel, Chinmay Kulkarni, Kevin Schmidt, Prathi Shastry, and Rao Rapeta. Optimizing the Decomposition of Time Series using Evolutionary Algorithms: Soil Moisture Analytics. In Proceedings of the Genetic and Evolutionary Computation Conference, Berlin, Germany, July 1519, 2017.

3. **Aniruddha Basak**, Ole Mengshoel, Stefan Hosein, and Rodney Martin. *"Scalable Causal Learning for Predicting Adverse Events in Smart Buildings."* Proceedings of the AAAI Workshop on AI for Smart Grids and Smart Buildings, Phoenix, USA. 2016.

4. **Aniruddha Basak**, Ole Mengshoel, Stefan Hosein, Rodney Martin, Jayasudha Jayakumaran, and Ishwari Aghav. *"Identifying Contributing Factors of Occupant Thermal Discomfort."* Proceedings of the AAAI Workshop on AISGSB, Phoenix, USA. 2016.

5. **Aniruddha Basak**, Chinmay Kulkarni, Kevin Schmidt, and Ole Mengshoel. *"Forecasting wetting and drying of post-wildfire soils in response to precipitation: A time series optimization approach."* In AGU Fall Meeting Abstracts, pages IN23C-1741, 2015

6. **Aniruddha Basak** and Jason D. Lohn. *"A comparison of evolutionary algorithms on a set of antenna design benchmarks."* IEEE Congress on Evolutionary Computation (CEC), 2013, (pp. 598-604).

7. **Aniruddha Basak**, Irina Brinster, and Ole J. Mengshoel. *"MapReduce for Bayesian Network Parameter Learning using the EM Algorithm."* Proc. of Big Learning: Algorithms, Systems and Tools (2012).

8. **Aniruddha Basak**, Irina Brinster, Xianheng Ma, Ole J. Mengshoel, *"Accelerating Bayesian network parameter learning using Hadoop and MapReduce"*, BigMine 2012, Beijing, China, p. 101-108.

9. **Aniruddha Basak**, Siddharth Pal, Swagatam Das, Ajith Abraham and Vaclav Snasel. *"A Modified Invasive Weed Optimization Algorithm for Time-Modulated Linear Antenna Array Synthesis"*, IEEE Congress on Evolutionary Computation (IEEE CEC 2010), IEEE Press, Barcelona, Spain, p. 907.

10. **Aniruddha Basak**, Siddharth Pal, Swagatam Das and Ajith Abraham, *"Circular Antenna Array Synthesis with a Differential Invasive Weed Optimization Algorithm"*, Hybrid Intelligent Systems (HIS), 2010 10th International Conference on. IEEE, 2010.

11. **Aniruddha Basak**, Siddharth Pal, Ravikumar Pandi, Bijaya Panigrahi and Swagatam Das, *"A Hybrid Differential Invasive Weed Algorithm for Congestion Management"*, Swarm, Evolutionary, and Memetic Computing. Springer Berlin Heidelberg, 2010. 630-638.

12. **Aniruddha Basak**, Siddharth Pal, A.R.Abhyankar, *" Modified Equivalent Bilateral Exchange Of Transmission Pricing Using DIWO"*, Power Electronics, Drives and Energy Systems (PEDES) & 2010 Power India, 2010 Joint International Conference on. IEEE, 2010.

13. Siddharth Pal, **Aniruddha Basak** and Swagatam Das, *"Detection and Length Estimation of Linear Scratch on Solid Surfaces Using an Angle Constrained Ant Colony Technique"*, Swarm, Evolutionary, and Memetic Computing. Springer Berlin Heidelberg, 2010. 254-261.

14. Siddharth Pal, **Aniruddha Basak**, Ravikumar Pandi, Bijaya Panigrahi and Swagatam Das, *" A Novel Multi-Objective Formulation for Hydrothermal Power Scheduling based on Reservoir End Volume Relaxation"*, International Conference on Swarm, Evolutionary and Memetic Computing (SEMCCO 2010) (Accepted).

15. Siddharth Pal, **Aniruddha Basak**,Swagatam Das and Ajith Abraham, *" Automatic Shell Clustering- A Metaheuristic Approach"*, IEEE International Conference on Systems, Man and Cybernetics (IEEE SMC 2010), Istanbul, Turkey (Accepted, 2010).

16. Siddharth Pal, **Aniruddha Basak**, Swagatam Das and Ajith Abraham , *" Linear Antenna Array Synthesis with Invasive Weed Optimization Algorithm"* ,International Conference on Soft Computing and Pattern Recognition (SocPar 2009), IEEE Computer Society, USA.

International Journal Publications :

1. **Aniruddha Basak**, Swagatam Das and K.C. Tan, *" A Bi-objective Differential Evolution Algorithm Enhanced with Mean Distance based Selection for Multimodal Optimization "* , IEEE Transactions on Evolutionary Computation, vol. PP, no. 99, p. 1, Dec. 2012.

2. Siddharth Pal, Swagatam Das, and **Aniruddha Basak**, *" Design of time modulated linear arrays with a multi- objective optimization approach"* , Progress in Electromagnetics Research, PIERB, 23, page 83-107, 2010. (SCI Impact factor: 3.763 @2009)

3. Siddharth Pal, Swagatam Das, **Aniruddha Basak**, and P. N. Suganthan, *" Synthesis of Difference Patterns for Monopulse Antennas with Optimal Combination of Array-size and Number of Subarrays - A Multi-Objective Optimization Approach"* , Progress in Electromagnetics Research, PIERB, Vol. 21, 257-280, 2010. (SCI Impact factor: 3.763@2009)

4. Siddharth Pal, Swagatam Das and **Aniruddha Basak**, *" Linear Antenna Array Synthesis with Modified Invasive Weed Optimization Algorithm"* , International Journal of Bio-Inspired Computing, Inderscience Publishers, 2010.

EXTRA-CURRICULAR ACTIVITIES

- Amateur Photographer.
- Passionate about Chess.