

Anish Acharya

Scholar Google LinkedIn Profile GitHub Profile

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Education

- **University of California, Irvine** Irvine, CA
M.S. Electrical Engg. and Computer Science Sept, 2013– Dec, 2014
 - Relevant Coursework: Machine Learning, Data Mining, Graphical Model, Information Retrieval, Advance Algorithms and Data structures, Statistical Learning, High Dimensional Learning, Recommendation System
- **Jadavpur University** kolkata, West Bengal, India
B. Engg. Electronics and Instrumentation engineering May, 2009 – March, 2013

Core Technical Skills

- **Interests:** Deep Neural Network, Deep Learning, Natural Language Processing, Convex and Non-Convex Optimization, Generative Models
- **Programming Languages-** Python, C++, C, MATLAB
- **Deep Learning Framework-** TensorFlow, PyTorch, Keras

Experience

- **Amazon Alexa AI** Sunnyvale, CA
Applied Scientist June, 2016 - Present
 - Applied Scientist in the Natural Language Understanding group of Amazon Alexa Conversational AI Core ML group @ Amazon Lab 126. Involved in proposing, designing , implementing core Alexa NLU models (Named Entity Recognition, Intent Classification, Entity Resolution, Domain Classification, Compressed DNN) Notable Live Launches of models owned by me: Communications (Alexa Calling), Timers, Alarms, Reminders, Calendar, Echo Show.
 - **eBay inc** San Jose, CA
Data Scientist Nov, 2015 - June 2016
 - Data Scientist in the Customer Insights and Analytics Team where I am working on the Targeting Engine built on a Collaborative Filtering Framework to connect customers with the right items as well as targeting customers for new deals, events through personalized e-mails.
 - **Schlumberger** Houston, Tx
Data Scientist March, 2015- Nov, 2015
 - Worked on designing, implementing and optimizing machine learning algorithms that work on structured and unstructured data originating from multiple sources including Schlumberger's business systems, sensors and cyber infrastructure. I also work on using text mining and natural language processing techniques to develop powerful insights from social, marketing and other sources of text data and use big data technologies to scale the developed algorithms to handle massive amounts of data.
 - **FEM inc.[Now Prizma.ai]** Los Angeles, CA
Data Engineer - Intern Winter, 2015
 - Worked on automatic reconciliation of entities, fusion of datasets and schema alignment; Setup data processing pipelines over hadoop or other frameworks; Constructing creative reusable solutions for various data analysis projects using Python, Django, MySQL, Elasticsearch, and Hadoop..
 - **Toyota Research in North America(TRINA)** Chicago, IL; Ann Arbor, MI
Data Scientist - Research Intern Summer, 2014
 - Involved in the development of C++ based real-time stereo algorithm to reconstruction 3D surrounding for autonomous car. Another extension was to develop a stereo evaluation benchmark based on slanted plane model of the surrounding.
 - **University Of California Irvine** Irvine, CA
Research Assistant 2013-2014
 - Mostly involved in modelling, developing structured prediction algorithms using Belief propagation based learning on images, social network. Also, was involved in managing two undergraduate students on the lab project.
 - **Bhabha Atomic Research Center** Mumbai, India
Visiting Research scientist Summer 2012
 - Mostly responsible for object detection and tracking used in tracking ,monitoring and deciding automatically on launching, evading missiles and other potential attacks.
 - **IIT Kharagpur** Kharagpur, India
Data Science Intern Summer 2011
 - Visiting Research Assistant in the Computer Science Dept. The work mostly involved the development of music recommendation engine using dimensionality reduction based item-item collaborative filtering.
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Selected Publications

- **Anish Acharya** , Rahul Goel, Angeliki Metallinou, Inderjit Dhillon, "Online Embedding Compression for Text Classification using Low Rank Matrix Factorization", **AAAI-2019** [Read Online](#)
- **Anish Acharya**, Saptarshi Das, Indranil Pan, Shantanu Das "Extending The Concept Of Analog Butterworth Filter For Fractional Domain"; **Signal Processing (Elsevier)** SIGPRO-D-12-01178 , Volume 94, January 2014, Pages 409-420
- **Anish Acharya**, Saptarshi Das , Indranil Pan "Optimum PID Control of Multi-wing Attractors in A Family of Lorenz-like Chaotic Systems", International Conference on Computing Communication and Networking technologies (ICCCNT-2012), 26-28 July, 2012
- **Anish Acharya**, Debatri Mitra, Kaushik Halder, "Stability Analysis Of Delayed System Using Bode's Integral " , 2013 International Conference on Computer Communication and Informatics (ICCCI-2013), Jan. 09-11, 2013, Coimbatore, India
- Sayan Saha, Saptarshi Das, **Anish Acharya**, Abhishek Kumar, Sumit Mukherjee, Indranil Pan, Amitava Gupta "Identification of Nonlinear Systems From the Knowledge Around Different Operating Conditions: A Feed-forward Multi-Layer ANN Based Approach", The Second IEEE International Conference On Parallel, Distributed and Grid Computing (PDGC-2012), Solan, India, 06-08 December, 2012
- Saptarshi Das , **Anish Acharya** , Indranil Pan "Simulation studies on the design of optimum PID controllers to suppress chaotic oscillations in a family of Lorenz-like multi-wing attractors", **Mathematics and Computers in Simulation (Elsevier)** (2014)
- Anindya Pakhira , Saptarshi Das , **Anish Acharya**, Indranil Pan, Suman Saha "Optimized Quality Factor of Fractional Order Analog Filters with Band-Pass and Band-Stop Characteristics" International Conference on Computing Communication and Networking technologies (ICCCNT-2012), 26-28 July, 2012, Coimbatore, India
- Saptarshi Das, Abhishek Kumar, Indranil Pan, **Anish Acharya**, Shantanu Das, Amitava Gupta, "Least square and instrumental variable system identification of AC servo position control system with fractional Gaussian noise", International Conference on Energy, Automation and Signal (ICEAS-2011), art. no. 6147165 , pp. 545-550, Bhubaneswar, India

In The News

- "Mamraj Agarwal Rashtriya Puraskar" by Gopal Krishna Gandhi, Governor Of West Bengal, INDIA [Press Release](#) 2007
- Amazon Blog Post About Compression Work [Amazon Blog HakerNews](#)

Honors and Awards

- Merit based scholarship holder from Ministry of Human Resource Development (M.H.R.D), Govt. of India 2009-2013
- Fellow of "CSIR Program on Youth for Leadership in Science" (CPYLS-2007) for students with outstanding results in Secondary Examination of various boards, organized by Indian Institute of Chemical Biology and Central Glass and Ceramic Research Institute

ArXived TUTORIALS

- Anish Acharya; A Complete Review of Controlling the FDR in a Multiple Comparison Problem Framework- The Benjamini-Hochberg Algorithm. [View Online](#)
- Anish Acharya; Template Matching based Object Detection Using HOG Feature Pyramid [View Online](#)

SELECTED

PRESENTATIONS

- "Optimum PID Control of Multi-wing Attractors in A Family of Lorenz-like Chaotic Systems", International IEEE Conference on Computing Communication and Networking technologies (ICCCNT-2012), 26-28 July, 2012, Coimbatore, India
- "Optimized Fractional Order Analog Filters with Band-Pass and Band-Stop Characteristics", International IEEE Conference on Computing Communication and Networking technologies (ICCCNT-2012), 26-28 July, 2012, Coimbatore, India
- "Introduction to Fractional Calculus and Fractional Order Systems", Dept. of Instrumentation and Electronics Engineering, Jadavpur University.

PROFESSIONAL

ACTIVITIES

- Served as Reviewer of Pattern Recognition Letters, KDD, Journal of Zhejiang University Science C, Springer and Indian Journal of Pure and Applied Physics (IJPAP), International Journal of Circuit Theory and Applications.
- Member of International Society of Automation.