

SANJIT SINGH BATRA

sanjitsbatra@gmail.com
www.sanjitsbatra.com
929-393-4845

OVERVIEW

Accomplished student of computer science with significant research and programming experience in computational biology and machine learning. Motivated, fast-learner accustomed to managing diverse and complex tasks to exceptionally high standards.

EDUCATION

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| 2014-2016 | M.Tech in Computer Science and Engineering
Indian Institute of Technology , Delhi, India
GPA: 9.0/10.0 |
| 2010-2014 | B.Tech in Computer Science and Engineering
Indian Institute of Technology , Delhi, India
GPA: 7.74/10.0 |
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RESEARCH EXPERIENCE

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| 2014-present | Bioinformatics Programmer, Baylor College of Medicine
Advisor: Dr. Erez Aiden, Baylor College of Medicine
Developed computational algorithms for analysis of 3D genomics data.
Designed visualization pipelines to help understand high-dimensional genomic data. Applied computer vision algorithms to identify features in 3D genome maps. |
| 2012-2016 | Undergraduate Researcher in Machine Learning
Advisor: Dr. Jayadeva, IIT Delhi
Designed and developed the Minimal Complexity Machines and their regression, fuzzy and feature selection variants and applied them to biological problems with clinical applications. |
| 2014-2016 | Undergraduate Researcher in Number Theory
Advisor: Dr. Amitabha Tripathi, IIT Delhi
Worked on variations of the Coin Exchange (Frobenius) Problem and solved two open problems resulting in two publications. |
| 2013-2015 | Undergraduate Researcher in Approximation Algorithms
Advisor: Dr. Naveen Garg, IIT Delhi
Explored techniques such as local search, LP-relaxations and primal-dual algorithms to develop constant-factor approximation algorithms for Min-Max Graph Coverings using Trees. |
| Summer 2012 | Wolfram Science Summer School
Advisor: Dr. Stephen Wolfram, Wolfram Research
Developed a Deep Learning model based on Restricted Boltzmann Machines in Mathematica and a scalable version in GO. |
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PUBLICATIONS

Jayadeva, Chandra, Suresh, **Sanjit S. Batra**, and Siddharth Sabharwal. "Learning a hyperplane regressor through a tight bound on the VC dimension." *Neurocomputing* 171 (2016): 1610-1616.

Phool Preet*, **Sanjit S. Batra***, Jayadeva . "Feature Selection for classification of hyperspectral data by minimizing a tight bound on the VC dimension." arXiv preprint arXiv:1509.08112 (2015).

Jayadeva, **Sanjit S. Batra**, and Siddharth Sabharwal. "Learning a Fuzzy Hyperplane Fat Margin Classifier with Minimum VC dimension." arXiv preprint arXiv:1501.02432 (2015, Manuscript Submitted).

Jayadeva, **Sanjit S. Batra**, and Siddharth Sabharwal. "Feature Selection through Minimization of the VC dimension." arXiv preprint arXiv:1410.7372 (2014).

Pawas Gupta, **Sanjit S. Batra**, Jayadeva. "Sparse Short-Term Time Series Forecasting Models via Minimum Model Complexity" (2016, Manuscript Submitted)

Sanjit S. Batra, Jayadeva, Joyeeta Mukherjee, Munishwar N. Gupta. "An Optimization-Free Approach to Predictive Analytical Chromatography" (2016, Manuscript Submitted)

Sanjit S. Batra, Nikhil Kumar, Amitabha Tripathi. "On a Linear Diophantine Problem involving The Fibonacci and Lucas Sequences" *INTEGERS* 15 (2015)

Sanjit S. Batra, Nikhil Kumar, Amitabha Tripathi. "Some problems concerning the Frobenius number for extensions of an arithmetic progression" (2016, Manuscript Submitted)

***Equally Contributing Authors**

PATENTS

2013	An Optimization Free Technique For Determining Concentration Of The Constituents Of A Mixture (Indian Provisional Patent)
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HONORS

2011	National Board for Higher Mathematics India: Selected among 15 students across India to attend the National Board of Higher Mathematics Nurture Program in 2011.
2010	IIT-JEE: Obtained All India Rank of 170 out of 400,000 candidates.
2010	AIEEE: Obtained All India Rank of 120 out of 1,100,000 candidates.
2009-2010	International Mathematics Olympiad Training Camp: Selected in the Top 30 (out of 100,000 all over India) applicants to attend the International Mathematics Olympiad Training Camp in 2009 and 2010 .

SKILLS

Skilled with Java, C++, Python, Awk, Perl, Mathematica, MATLAB and LaTeX. Comfortable with Unix.