

# Abhinav Malhotra

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Github  
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## Education

### Georgia Institute of Technology

Ph.D. in ChemE. Minor in *Computational Engineering*, GPA: 3.91/4

2014 – 2019

Atlanta, GA

### Indian Institute of Technology, Roorkee

B.Tech, M.Tech, BR Varshney Medal(Top Senior), GPA: 9.15/10

2008 – 2013

India

## Projects

### Understanding Indian Premier League with Data Science

- > Web scraped world's biggest cricket league website via *Beautiful Soup* to collect relevant auction data.
- > Data cleaning and visualization *Pandas, Numpy and Seaborn* to quantitatively find most efficient teams.
- > Article available on [medium.com](https://medium.com)

### Predicting Material Properties using Machine Learning

- > Used SVM, LDA and Kernel-expansion algorithms to predict properties of interest for Transparent Semiconductors.
- > Leveraged statistical tools (PCA, LASSO) to identify best features to guide future material fabrication.

### Computational Modeling of Nanoscale Heat Flow

- > Created *FORTRAN and Python* codes to predict thermal energy flow in nanostructures.
- > Developed space-discrete models to evaluate role of morphologies and surfaces in heat conduction.
- > Authored *10 peer reviewed articles (8 first-authored)* in scientific journals.
- > Developed a multi-year research collaboration between nanostructure manufacturing, measurements and computational research groups.

### Stock Trading AI Agent

- > Created a stock trading agent in *Python* trained on time-series data to minimize volatility in a simulated market.
- > Implemented multiple ML algorithms from scratch, including Decision Trees (ID3, PERT) and AdaBoost.

### Neural Net for Epilepsy Detection

- > Developed a Neural Network seizure alert toolkit in *MATLAB* using time-series EEG data.

## Relevant Work Experience

### University of Delaware

Postdoctoral Researcher

Sep 2019 – Present

Newark, DE

- > Developing computational models to generate a database of electric-field and material interactions.
- > Machine Learning to optimize designs, avoiding computationally intensive multi-physics simulations.

### Jeevomics Pvt. Ltd.

Data Scientist

June 2013 – Aug. 2014

New Delhi, INDIA

- > Created libraries of potential reaction pathways in *Python and MATLAB*, integrated with in-house machine learning tools to predict cancer drug efficacy.

## Other

**Proficient in:** Python, FORTRAN, SQL, COMSOL, MATLAB, Mathematica,  $\text{\LaTeX}$

**Currently learning:** GoLang, French

**Interested in:** Soccer: all things Arsenal, ex-India and US federation certified referee | Science communication: explaining complexity with simplicity at <https://medium.com/@abhinavmalhotra>