

# ABDERRAHMAN N. SOBH

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## Work Experience

*Software Developer*, University of Illinois at Urbana-Champaign (UIUC), (2012- )

### Data Science Platform (Python, Spark)

- Designed machine learning and feature selection pipelines.
- Built machine learning tool for NLP, Text Features.
- Optimized distributed performance using clusters.

### Online Database Platform (PHP, HTML, MySQL)

- Created webpages allowing users to record data to a MySQL db.
- Provided graphical views of data from the MySQL database.

Source: ([https://github.com/NanoBioNode/ISU\\_website\\_PublicVers](https://github.com/NanoBioNode/ISU_website_PublicVers))

### Simulation Workflows (Python, TCL, Fortran, Rappture for XML)

- Combined applications within a virtual container for a single experience.
- Created a set of GUIs to replace text-based programs.
- Optimized memory handling and run-time on millions of entries.
- Applied parallel threading to serial coding procedures.
- Connected workflow to remote cluster venues for parallel processing.
- Visualized simulation result data using VTK toolkit.

Discrete Dipole Scattering Simulation Workflow ("nanoDDSCAT+")

Source: (<https://github.com/NanoBioNode/nanoDDSCATplus>)

App: (<https://nanohub.org/tools/ddaplus/>)

Molecular Dynamics Workflow ("Functionalization Workbench")

Source: (<https://github.com/NanoBioNode/InorganicBuilderPlugin>)

App: (<https://nanohub.org/tools/partsub/>)

## Technical Skills



## Personal Experience

### Exposure to Data Science

- Member of Data Scientist Engineers Project Group Meetup (2016- )
- Member of New York Open Statistical Programming Meetup (2012-13)

### Kaggle Data Science Competitor

(Python/Pandas, GraphLab, scikit-learn, XGBoost, AWS)

- Cleaned data sets, normalized data, predicted missing values.
- Used NLP, clustering to investigate text features.
- Performed feature selection, created models to predict new data values.
- Used Amazon Web Services for parallel data processing workflows.
- Received public recognition for open-sourced script (aka a "Kaggle Kernel").

Source: (<https://github.com/itg-abby/KaggleScripts/>)

### Auto Level-Creator for "In the Groove 2" Video Game (Python)

- Analyzed music/time series and mapped relevant features to a timing signature.

Source: (<https://github.com/itg-abby/StepGen>)

Python, Spark, TCL,  
PHP, MySQL, SQL, NoSQL,  
R, SAS, Matlab, Mathematica,  
Tableau,  
Microsoft VBA/Excel,  
Fortran90, C, C++,  
HTML, JavaScript, CSS, XML,  
OSX, Linux, Windows

## Education

*BS in Statistics*, May 2012, University of Illinois, Urbana-Champaign, IL

- Dean's Honor List (2008), (2012)

## Relevant Coursework

- Advanced Data Analysis
- Statistical Data Management
- Applied Regression and Design
- Biostatistics
- Computer Engineering
- Applied Linear Algebra