

# Siddharth Dixit

Website: <http://sid-darthvader.github.io> | Email: [sd882@snu.edu.in](mailto:sd882@snu.edu.in) | Phone: +91-9140091132

## EDUCATION

### SHIV NADAR UNIVERSITY

BS IN MATHEMATICS (MAJOR) &

COMPUTER SCIENCE (MINOR)

SPECIALIZATION: ARTIFICIAL  
INTELLIGENCE

2017-2021 | India, 201314

CGPA 7.82/10

INTERMEDIATE: 94%

HIGH SCHOOL: 93.4%

(aggregate of 99% in Maths & CS)

## RELEVANT COURSES

- Time Series & Forecasting (A)
- Bayesian Networks (A)
- Deep Learning (A-)
- Machine Learning through R (A)
- Dynamical Systems (A)
- Data Analytics for Societal Applications (A)
- Big Data Technologies (A-)
- Mathematical Finance (A-)
- Probability & Randomized Algorithms (A-)
- Optimization (B-)
- Partial Differential Equations (B)
- Linear Algebra- I, II (B-)
- Genetic Algorithms (B-)

## SKILLS

### PROGRAMMING LANGUAGES

• Python • R • Java • C • SQL

### TOOLS & FRAMEWORKS

#### PYTHON

• Scikit Learn, Keras,  $H_2O$ , Flask, Tensorflow, Pyspark

#### R

• Caret, AutoML, BNlearn, Keras  
• Model specific packages in R

## OPEN SOURCE

Contributed to projects on Causal ML:

- Microsoft DoWhy
- Microsoft DICE

## WORK EXPERIENCE

### CAUSAL AI CONSULTANT, CAUSALENS

Dec 2020-May 2021 | London, UK (Remote due to COVID-19)

- Worked as an intern with the Marketing & Applied Data Science (ADS) teams.
- Researched and developed over 50 innovative business use-cases for Causal AI in Banking, Marketing, Insurance, Telecommunications, E-commerce & Retail, Manufacturing & IOT, Transport & Logistics among other industries.
- Carried out proof-of-concept data science work for:
  - Credit Risk Modeling in SME Lending [White Paper]
  - Predictive Lead Scoring for B2B businesses
- Assisted ADS with data science work for client projects
- Suggested product improvements by reviewing latest research on Causal ML

### TEACHING ASSISTANT, SNU

Aug-Nov, 2020 | Delhi (NCR), India

- Co-taught MAT-494: Deep Learning for Predictive Modeling [Course Page] to 3<sup>rd</sup> & 4<sup>th</sup> year students at Shiv Nadar University.
- Conducted lab sessions in R & Python with a focus on solving business problems using Predictive Modeling.
- Supervised 7 student projects on using Deep Learning to solve problems in Healthcare, Banking, Asset Management & CRM.

### VISITING RESEARCH SCHOLAR, UNIVERSITY OF LUXEMBOURG

Feb-Mar, 2020 | Luxembourg City, Luxembourg

- Conducted research on Physics inspired Machine Learning and Machine Learning led discovery of new materials under the guidance of Prof. Stephane Bordas.

### DSG PARTICIPANT, ALAN TURING INSTITUTE

AUG 2019 | Bristol, UK

- Part of a cross-functional team of 10 researchers and data scientists tasked to tackle the problem of Air Pollution in Bristol City Center using Machine Learning.
- Worked on identifying location-wise  $NO_x$  predictors & developing Predictive ML models linking Climate & Air Pollution Data.
- Collaborated closely with the team working on Traffic Data.
- Analyzed the model results & provided data-driven suggestions which could be used by the Bristol government to reduce air pollution in their City Center.

## PUBLICATIONS

### CONFERENCES

- "Machine learning approaches to identify and design low thermal conductivity oxide alloys for thermoelectric applications"
  1. 2019, ECI: Composites at Lake Louise, Alberta, Canada (Accepted but not presented)
  2. FAIRDI for Materials Genomics, Berlin 3-5 June, 2020

### JOURNAL

- "Get Bristol moving: Tackling air pollution in Bristol city centre" - Grey Paper by Alan Turing Institute.
- "Network learning approaches to study Happiness"- Arxiv Pre-print.
- "Machine learning approaches to identify and design low Thermal Conductivity Oxide Alloys for Thermoelectric applications"- in Cambridge University Press.

## PAST RESEARCH PROJECTS (SELECTED)

### **FROM PREDICTING TO UNDERSTANDING WORLD HAPPINESS** Aug 2019- July 2020

- Performed literature review on using AI techniques for studying Happiness and Loneliness
- Built a series of Panel ML, Deep Learning models on UN data to accurately forecast a countries Happiness Index
- Learned a Bayesian Network to understand the changes in world happiness with changes in macro-economic, social & personal factors.

### **FORECASTING POLLEN CONCENTRATION LEVELS IN LUXEMBOURG** Jan-Feb 2020

- Pre-processed open pollen data recorded daily from 1992-present.
- Studied the factors & climatic conditions affecting Pollen concentrations of 31 different species found in Luxembourg and their associated harmful effects on human health
- Built 5 different types of RNNs viz. Multivariate RNN, Elman Network, Jordan Network, GRU, LSTM to accurately forecast pollen concentration levels- with the best model yielding < 10% MAPE.

### **MACHINE LEARNING LED DISCOVERY OF NOVEL MATERIALS** Nov 2019- July 2020

- Developed a 2 step Machine Learning approach to deal with small datasets frequently encountered in Materials Informatics.
- Built soft voting classifiers to model highly imbalanced data.
- Modified Classification to an Anomaly detection problem for identifying new and promising Thermoelectric Oxides from over 2000 unexplored compounds.

## BLOG ARTICLES

- "Beyond Predictions: The causal story behind Hotel Booking cancellations" in TowardsDataScience, 2020- also featured by Microsoft Research
- "Predicting Bank Churn using Deep Learning" in TowardsDataScience, 2018
- "Predicting product sales through ads delivered on Social Networking Sites" in Coinmonks, 2018
- "An Essential Guide to Numpy for Machine Learning in Python" in BecomingHuman.ai, 2018

## POSITIONS OF RESPONSIBILITY

### **FOUNDER- SNU.AI** Oct 2019- Nov 2020 | Shiv Nadar University

- Appointed by the Director of Research at my university to start a club that encourages AI research at the undergraduate level.
- Formed the core committee by interviewing over 50 candidates and started SNU.ai
- The club gained immense popularity and over a period of 1 year, I mentored over 100 undergrads to learn ML and apply it to research projects within their field of interest.
- Organized talks & webinars with eminent AI researchers from different parts of the world.
- Started a Medium Publication where students from the club wrote articles on AI & its applications.

## ACCOMPLISHMENTS

- Awarded Vice Chancellors funding of \$1100 as travel scholarship.
- Youngest participant to be selected amongst 50 AI researchers to participate in Data Study Group organized by the Alan Turing Institute & hosted by the University of Bristol.
- Won 2nd Prize of the dot tech Category & a registered domain for 1 year for our Web App Emozers- an emotion based music web-application- in Hack Data 2018
- Awarded a scholarship of 50% on the Tuition Fee for pursuing a BS in Mathematics & Computer Science at Shiv Nadar University, India.