

Nikhil Rao Sira

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EDUCATION

Stony Brook University, Stony Brook

Jan 2021 - May 2022

Master of Science in Computer Science, Current GPA – 3.5/4

Relevant Coursework: Network Security, Visualization, Analysis of Algorithms, Probability and Statistics for Data Science

Vellore Institute of Technology, Vellore, India

July 2014 - May 2018

Bachelor's in Computer science & Engineering GPA – 8.63/10.00

Relevant Coursework: Data Structures, Algorithm Design and Analysis, Object-oriented Programming and Paradigm, Internet and Web Programming, Database, Operating Systems, Software Engineering

INDUSTRY EXPERIENCE

Graduate Analyst - Barclays, India

July 2018 - Dec 2020

Project – Hawkeye (Python - Pandas, Scikit Learn, AWS)

- Developed an ML based solution to classify money mules among retail banking customers and identifying their traits.
- Cross validated using various traditional classification models to achieve F1-score of **97%**.
- **Winning solution** in the **BX India Hackathon, 2020**.

Project – Optimus Data Lake Ingestion (Ab Initio, Teradata, SQL, Hadoop, Hive)

- Developed and standardized an Ab Initio framework, performing end-to-end transformations to ingest **25+** sources into the data lake.
- Responsible for coordinating with multiple teams globally for knowledge transfer and standardization of the solution. Ensured the deliverables were met within the projected deadlines.

Project – Autopay (Python – OpenCV, Tesseract)

- Built a restful Intelligent Character Recognition solution in Python that minimized manual workflow in authorizing large scale corporate payments by over **95%**.
- Scanned manually filled corporate payment forms using image processing in OpenCV and processed characters using Tesseract model trained with over **10000** manually filled forms.
- **Winning solution** in the **Barclays International Hackathon Q3, 2018**.

Project – Nebula (Bash Scripting, Flask, JavaScript, HTML5, CSS)

- Developed a company-wide task automation portal for various manual tasks.
- Reduced processing time from **8 hours** to as low **5 mins**.
- Automation tasks include test data generation using Bash scripting and Ab Initio, automatic deployment document generation using Python, CI-CD pipelines for development and test environments and batch housekeeping scripts using Bash Scripting.

Project – ETrading, Masspay and Olympus (Ab-Initio, Oracle SQL Developer, Bash Scripting, Teradata)

- Worked on big data transformations using Ab Initio on large-scale raw data on the Barclays global data platform. Sources include trading, customer onboarding and high value payments data.
- Data was used for further analytics in financial crime and customer onboarding.

Research and Development Intern - Center for AI and Robotics, DRDO, India

Jan 2018 - June 2018

- Worked in the Intelligent Systems and Robotics Division (ISRD) to research the applications of probabilistic topic models like Latent Dirichlet Allocation and ways to enhance semantic search using them.
- Worked on new labelled relational topic models that can model datasets using text, labels and links and entities. New topic model was developed in **python** using sklearn, numpy, nltk, scipy, gmpy2 and keras. The model gave an accuracy of **72.7%** - an improvement on existing traditional classification models.
- Fused the models with the Named Entity Recognition tool in the Stanford NLP Library to enhance semantic search.
- The research is to be used by DRDO for creating a search engine.

Web Developer Intern - Buildtraders, India

Dec 2016- Jan 2017

- Contributed to the development of the online shopping portal, which is based on HTML5, CSS3, Bootstrap 3, JavaScript and LAMP stack

TECHNICAL SKILLS

Domains

Full Stack Development, Data structures, Algorithms and Problem Solving, Machine Learning

Languages

C/C++, Python, Bash Scripting, Go

Web Development

Flask, Bootstrap, HTML, CSS, LAMP

Technologies/Frameworks

Ab Initio, AWS, Pandas, scikit-learn, Git, Linux

Databases

MySQL, Teradata, Oracle

ACADEMIC PROJECTS

DNS Poisoning and Detection (Go, tcpdump)

- DNS poisoning tool that captures traffic from a network interface and injects forged responses to victim's DNS resolver and redirects the victim to a malicious page.
- Created a DNS poisoning detector that captures the traffic in a network interface and detects DNS poisoning attempts.

FIFA Player Analysis (D3.js, Flask, HTML5, Bootstrap, CSS)

- Developed a visual analytics tool to gain insights, correlations and meaningful patterns in the FIFA Players Dataset. Used Heatmaps, Word Clouds, spider charts and choropleth maps to help decision making such as buying players and building player profile.

VIT Lost and Found (XAMPP, Bootstrap, HTML, CSS, JavaScript)

- An online portal for reporting lost and found items in and around the VIT campus. Features include email notifications, image upload, item features, contact details and database view.

Impact of Covid 19 on Stock Market (Python - Pandas, NumPy, scikit-learn)

- Data Cleaning, Outlier Detection, Time Series Forecasting, Regression and Hypothesis Testing on Covid data for understanding how Covid impacted on the stock market.