1102 Boylston St, Apt 2
Boston MA - 02215
Phone No: +1-617-818-4646

SAI NIKHIL THIRANDAS

saint.math.1729@gmail.com
Website: http://saint1729.me/
LinkedIn: linkedin.com/in/saint1729/

EDUCATION

- Northeastern University, Boston – M.S. in Applied Mathematics (Sep 2020 - Present). GPA: **3.78**
- Indian Institute of Technology, Kharagpur – B.Tech. in Civil Engg; IIT JEE AIR: **4938**; AIEEE AIR: **664**; EAMCET AIR: **985**

COURSEWORK

Mathematics	Multivariate Calculus, Applied Linear Algebra, Probability & Statistics, Differential Equations
Computer Science	Machine Learning, Object-Oriented Design, Data Structures & Algorithms

TECHNICAL SKILLS

Languages	Python, R, Java, SQL, PHP, Perl, HTML, CSS, TypeScript, Visual Basic, MATLAB, Mathematica
Machine Learning	Regression, Classification, Clustering, Dimensionality Reduction, Decision Trees, Random Forests, Bagging, Boosting, Neural Networks, Feature Engineering, Principal Component Analysis
Frameworks	Hadoop, Apache Spark, NumPy, pandas, Matplotlib, scikit-learn, SymPy, Jupyter
Additional	Git, Jenkins, JIRA, Docker, Excel, IntelliJ IDEA, PyCharm

PROJECTS

Data Modeling using Markov Chain   http://saint1729.me/MATH7241.pdf   **Sep 2020 – Dec 2020**
- Performed Time Series Analysis of average runs of opening batters in baseball from years 1871 – 2015 with a Markov Chain with 9 states on the dataset (rows = 101,333) obtained from Sean Lahman's website.
- Computed the limiting probability distribution. Calculated auto correlation values of original time series and a simulated time series. Observed that 0th and 1st autocorrelations of original time series have a percentage difference of 0.4 percent and 14.7 percent respectively, and gap increases as we go down the comparison table.
- Performed a Goodness of Fit Test at 5 percent significance level for two step transition of time series and predicted that states 6 and 8 are following Markov's Principle.

Predator-Prey Mathematical Modeling   http://saint1729.me/MATH5131.pdf   **Jul 2020 – Aug 2020**
- Modeled Predator (Bald Eagle) – Prey (Rodents) population growth using Lotka-Volterra equations modified with weak Allee effect and pesticide constant and obtained simulated population plots with/independent of time.
- Improved the existing model accuracy to 94 % and determined the Allee's constant and calculated lethal limit for rodenticide usage to maintain ecological balance.

Algorithm for coupled time-varying ODE   http://saint1729.me/IITKGP.pdf   **Sep 2012 – Dec 2012**
- Proposed analytical solution for solving special cases (constant coefficient, self-symmetric) for set of first order coupled time varying coefficient ordinary differential equations.
- Implemented Runge-Kutta 4th order algorithm for solving set of non-homogenous coupled time varying ODEs.

EMPLOYMENT

Software Engineer II (L62)   **Microsoft**   **Sep 2020 – Sep 2020**
- Part of One-Note team. Just joined but didn't work. Left job to pursue master's to achieve long term career goal.

Senior Software Engineer   **Hitachi Vantara, Oracle, Altair Engineering**   **May 2013 – Aug 2020**
- New features implementation and functionality enhancement in the **Agile** environment using the **TDD** approach.
- Optimized TC of duplicate rows detection algorithm from $O(n^2)$ **to** $O(n)$, improving runtime from 4 min to 7 sec.
- Adapted **Tesseract OCR's** code, to increase accuracy in text-recognition for screen fonts from **50 %** to **95 %**.

EXTRA ACADEMIC ACTIVITIES

- GitHub - HackerRank - StackOverflow - Coursera - Brilliant - InterviewBit
- Contributed to an open-source organization named **SymPy** during a GSoC application.
- Ranked in the top 100 in a CodeSprint, an algorithm competition, on **HackerRank**.