Aniruddha Mukherjee

Graduate Student

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Education

M.S. in Computer Science
(Fully Funded)
Aug 2022 – May 2024

Purdue University – West Lafayette
Focus: Machine Learning Applications & Quantum Computing.
Research Advisor: Professor Aniket Bera, Ph.D.
Lab. Webpage: https://ideas.cs.purdue.edu
Research Topic: Social Network Analytics for Videos and Multimedia Content.

B.S. in Computer Science and Statistics (GPA: 3.68/4.00)
Aug 2018 - May 2022

University of Illinois – Urbana Champaign

- Graduated with High Distinction
- Minor in Econometrics
- Minor in Computational Science & Engineering
- Minor in Business Administration
- Data Science Certification.

Awards and Recognition

- 3rd Place in Ashby Prize in Computational Science
- Machine Learning Certification from Stanford University Instructor: Andrew Ng
- Financial Markets Certification from Yale University Instructor: Robert Shiller
- Dean's Merit List: Spring 2022, Fall 2021, and Fall 2020

Industry Experience

Mercury Systems, Torrance, CA.
May 2023 – Aug 2023 (In person)
Aug 2023 – Current (Remote

Software Developer Intern
Manager: Michael Sorensen

- Developed embedded software for aerial vehicles using C/C++, assembly, Python, and Green Hills Software's products, such as Integrity RTOS and MULTI IDE.
- Designed and implemented the controller system architecture for an Arduino-based test platform, using best practices and industry standards.
- Created an automated code validation system using Python, LDRA, Bitbucket, and Jenkins, that detected code changes, identified the user and branch, and applied LDRA tools to ensure code quality and compliance.
- Created an automated hexadecimal to voltage converter for Arduino systems, using Python and serial communication protocols.
- Lead the presentation for many projects that were undertaken in the team I was a part of, demonstrating my leadership and communication skills.

Research & Teaching Experience

Research Project
Transformer (BERT) models.
Aug 2022 - Current

Purdue University – West Lafayette, Department of Computer Science
Advisor: Aniket Bera, Associate Professor in Computer Science
Development of a new and novel architecture using Bidirectional Transformers for contextual sentiment analysis and information diffusion over geographic and online graphical network.
Paper submitted to AAAI 2024. Title. EDIT-BERT: Emotion Detection and Integrated Transmission using Transformer Architecture for Semantic Text and Graph Data.

Research Assistant
Topic Modeling and Sentiment Analysis Research Project
May 2019 - Dec 2019

University of Illinois – Urbana Champaign, Gies College of Business
Advisor: Ramanath Subramanyam, Professor of Business Administration and William N. Scheffel Faculty Scholar at the University of Illinois – Urbana Champaign
Worked on a Ph.D. research project in the Information Systems Management area using Latent Dirichlet Allocation (LDA) based topic modelling and sentiment analysis.

Research Assistant
Predictive Analysis Research Project
June 2021 - June 2022

Data Analysis of COVID-19 Hospitalization
With Amit Kumar Mitra, Assistant Professor, Auburn University - Harrison College of Pharmacy.
Worked on developing a causal machine learning based model for predicting hospitalization and ICU admission risk of COVID-19 patients using data from NIH N3C data repository.

Teaching Assistant EPICS Aug 2022 – May 2023	**Purdue University Graduate Levels Teaching Assistantship Responsibilities** Responsibilities include providing disciplinary assistantship for four courses, and development and delivery of skill and training sessions throughout the semester for EPICS Program.

Selected Projects from Undergraduate Studies

Machine Learning Personal Project Jan 2018 - July 2018	**Prediction of FIFA Soccer World Cup Matches** **Personal project with *Bhupinder Singh Juneja, Ph.D. student in Bioinformatics at University of Minnesota, Minneapolis*** Collected a large dataset on soccer players and matches. Organized the data and created variables in SQL. Used statistical and Machine Learning Methods for prediction in R and Python. Prediction accuracy: 65% Area Under the ROC Curve. (ref: https://aniruddhamukherjeesite.wordpress.com/summary-of-group-stage-matches/)
Systems Programming Jan 2018 - July 2018	**Developed Modified UNIX Shell in C** **Project for Systems Programming class at the University of Illinois – Urbana Champaign** Implemented a modified version of UNIX shell in C that simulated Bash. It supported built in and external commands along with no memory leak. It supported all expected functionality of a shell.
Database Systems Project Jan 2018 - July 2018	**Developed Covid-19 Risk Projection Dynamic Website** **Project for Systems Programming class at the University of Illinois – Urbana Champaign** Created a dynamic website for mapping the likelihood of contracting COVID-19 in real time. Using publicly available data, it would map the severity, and predict the likelihood of contracting COVID-19. Users could also feed personal information such as pre-existing conditions, medical history, and vaccination status, to receive a customized prediction of the likelihood of contracting COVID -19.

Selected Coursework

Graduate Aug 2022 – Current	Quantum Science and Technology, Statistical Machine Learning (theory of machine learning), Advanced Artificial Intelligence, Deep Learning, Quantum Computing, Data Communication and Computer Networks, Algorithm Design – Analysis & Implementation.
Computer Science Aug 2018 - May 2022	Introduction to Computer Science in Java, Software Design Studio in Java and C++, Discrete Structures, Data Structures in C++, Computer Architectures using MIPS Assembly and C, Systems Programming in C, Algorithms, and Models of Computation, Programming Languages and Compiler Design in Haskell, Database Systems (DBMS) in SQL and Cloud platforms (GCP), Numerical Methods in Python, Machine Learning in Python.
Statistics and Mathematics Aug 2018 - May 2022	Statistical Analysis in R, Data Science Discovery in Python, Statistical Programming Methods in R, Statistics and Probability I and II, Statistical Modeling I in R, Statistical Modeling II in R, Statistical Computing in R, Advanced Data Analysis in SAS, Stochastic Processes in R, Calculus II and III, Advanced Differential Equation, Applied Linear Algebra.
Economics and Business Aug 2018 - May 2022	Microeconomics, Macroeconomics, Economic Statistics I and II, Intermediate Microeconomic Theory, Macroeconomic Policy with focus on Financial Economics, Management and Organizational Behavior, Principles of Marketing, International Business, Corporate Finance, Accountancy.
Stanford University (Online) May 2022 – Sep 2022	**Machine learning** – supervised: classification and regression, logistic regression, Bayes classifier, Support Vector Machine, Neural Network; unsupervised: K-Means clustering, Principal Component Analysis (PCA).
Yale University (Online) May 2022 – Sep 2022	**Financial markets** – basics: securities, insurance, and CAPM; behavioral finance: forecasting, pricing, and inflation; risk management: debt theory, efficient markets, and corporate stocks; financial institutions: banks, investment banks, and exchanges; public and non-profit finance: real estate, monetary policy, and environmental finance.

Additional Skills

Programming Skills	**C/C++, Java, Python, R, SQL, Octave, Haskell, SAS, Matlab, MIPS Assembly.**
Languages	**English –** Native fluency, **Spanish** – Native fluency, **Hindi –** Native fluency, **Bengali –** Native fluency.
Hobbies	Reading books, playing and watching soccer, travelling, and photography (Ref. https://aniruddhamukherjeesite.wordpress.com)