

# Pranav Suklal Chavan

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## EDUCATION

**Rutgers, The State University of New Jersey**  
*Masters in Information Technology and Analytics*

**Newark, NJ**  
**Aug 2022 – Dec 2023**

**The University of Mumbai**  
*Bachelor of Engineering in Information Technology*

**Mumbai, India**  
**Jul 2018 – May 2022**

## SKILLS

- **Technical:** AWS (EC2, S3, RDS), CI/CD, Infrastructure as Code (IaC), CloudFormation, Terraform, Jenkins, Docker, Kubernetes, Ansible, Cloud Security, Monitoring & Logging (CloudWatch, Splunk)
- **Management:** Stakeholder Collaboration, Requirements Gathering, Problem-solving, Critical Thinking, Communication Skills, Sales Operations, Budgeting and Forecasting, Financial Planning and Analysis
- **Certifications:** AWS Academy Cloud Foundation, CCNA Enterprise Networking, Security and Automation, Python

## PROFESSIONAL EXPERIENCE

**Rutgers Business School**  
**Adjunct Professor**

**New Brunswick, NJ**  
**Aug 2024 – Present**

- Created and delivered a "Computer Application for Business" course with a focus on real-world applications.
- Taught data analysis using Tableau, Excel, and SQL to enhance students' technical skills.
- Engaged industry professionals for guest lectures and real-world projects.
- Increased student engagement by 20% through interactive teaching methods.

**Rutgers Business School**  
**Research Assistant**

**New Brunswick, NJ**  
**Oct 2023 – July 2024**

- Collaborated with teams to design and deploy AWS-based cloud infrastructure, focusing on security and compliance.
- Developed automated pipelines using Jenkins and Terraform, reducing manual deployment time by 50%.
- Implemented CloudWatch for real-time monitoring and logging, enhancing infrastructure reliability and security.
- Utilized SQL and Python to manage and analyze large datasets, optimizing research project workflows.

**Utsavi Trading Co.**  
**DevOps Engineer**

**Mumbai, India**  
**Jul 2019 – Dec 2021**

- Developed automated scripts using Python to streamline data workflows, reducing manual tasks by 40%.
- Assisted in setting up continuous integration pipelines, ensuring smooth deployment processes.
- Contributed to managing SQL databases, focusing on performance optimization and reliability.
- Applied security best practices to protect sensitive data within SQL environments.

## PROJECTS

**Deep Learning Algorithm for Cybersecurity Prevention for Intrusion Detection System**

**Aug 2023- Dec 2023**

- Directed the creation of a robust IDS using state-of-the-art deep learning algorithms, reducing false positives by 20%, increasing detection accuracy by 15% compared to traditional methods
- Implemented neural network ensembles to bolster threat recognition capabilities, achieving a 25% improvement in identifying sophisticated cyber threats and minimising detection latency by 30%
- Engineered a real-time deep packet inspection module utilising convolutional neural networks (CNNs), resulting in a 40% reduction in time-to-response for cybersecurity incidents, enhancing the system's agility in preventing potential breaches

**SkyTrak: A comprehensive flight arrival and delay analysis system**

**Aug 2022 – Dec 2022**

- Upheld machine learning and data analytics to analyse and optimise flight operations by 15-20%
- Analysed 300k flight data gathered over 5 years to pinpoint the leading cause of delays in operations
- Assessed 85% accuracy in delay prediction, integrated into the dashboard for 30% faster decision-making by airline operations

## RESEARCH EXPERIENCE

- [Breast Cancer Prediction Using Recurrent Neural Network](#)
- [Next Word Prediction using Relative Analysis of Machine Learning and Deep Learning Techniques](#)

LEADERSHIP POSITION

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**General Secretary**  
*Student Union Council, RAIT*  
Led strategic operations, represented the council in external affairs, and ensured organizational goals were met.

Aug 2021 – Jul 2022

**Management Chief**  
*RAIT ACM Student Chapter*  
Developed business strategies and led teams to achieve event objectives and member engagement.

Jul 2020 – Aug 2021

## PERSONAL STATEMENT

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Name of Applicant: **PRANAV SUKLAL CHAVAN**

My journey with technology began when I was just nine years old and first introduced to the computer. The simplicity and power of being able to perform operations like addition and subtraction on this machine fascinated me. That early experience sparked a lifelong passion for computing, driving me to explore and learn as much as I could. From mastering MS Office and HTML at a young age, I was drawn deeper into the world of Information Technology, leading me to pursue it as my major during my undergraduate studies. I have always believed that Information Technology serves as the backbone of all fields of engineering, a conviction that has guided my academic and professional choices ever since.

During my undergraduate studies in Information Technology, I was captivated by subjects like Data Structures and Analysis, Computer Organization and Architecture, and Cryptography and Network Security. These subjects not only fueled my enthusiasm but also deepened my understanding of the fundamental principles that underlie modern computing. This solid foundation was instrumental as I transitioned to Rutgers Business School to pursue a Master's degree in Information Technology and Analytics. My time at Rutgers introduced me to advanced concepts in Information Security, further clarifying my interest in this critical field and reinforcing my desire to contribute to it through research.

At Rutgers, I was particularly fascinated by the core principles of encryption, network security, intrusion detection systems, and risk management. These concepts are not just academic; they are vital in today's increasingly interconnected and vulnerable world. I have laid a strong foundation in these areas and am eager to build on this knowledge through advanced studies. I am particularly interested in fields like threat detection and mitigation, cryptography, network security, incident response, and vulnerability assessment. I believe that pursuing a PhD in Computer Science will allow me to delve deeper into these areas and contribute to advancing the state of the art in cybersecurity.

My first significant research experience came during my capstone project, where I worked under the guidance of Professor Sergei Schrieder on a project titled "Deep Learning Algorithms for Cybersecurity Prevention in Intrusion Detection Systems." Over four months, I focused on developing a robust intrusion detection system (IDS) capable of detecting and preventing distributed denial-of-service (DDoS) attacks using deep learning techniques. I implemented a deep recurrent neural network (RNN) model and compared its performance with other machine learning algorithms, such as Deep Belief Networks (DBN) and Convolutional Neural Networks (CNN). By utilizing advanced datasets, including CSE-CICIDS2018 and CIRA-CIC-DoHBrw-2020, hosted on AWS, I trained and evaluated these models. The deep RNN model outperformed others in terms of accuracy, sensitivity, and specificity, proving its effectiveness for real-time anomaly detection in network security. This project not only reinforced my interest in cybersecurity but also provided me with valuable experience in applying deep learning to practical, high-impact problems.

In addition to my capstone project, I gained significant research experience as a research assistant in the Accounting Information Systems department under Professor Hussein Issa. My

work involved analyzing and processing citation datasets using machine learning techniques to extract meaningful patterns and insights. This experience honed my skills in data preprocessing, feature selection, and model evaluation, while also deepening my understanding of handling large datasets and ensuring data integrity. Collaborating closely with Professor Issa, I learned to approach complex research questions methodically, interpret data-driven results accurately, and contribute effectively to academic publications. These experiences collectively provided me with a strong foundation in both research methodology and the practical application of machine learning techniques to real-world problems.

My role as an Adjunct Professor at Rutgers University in the Department of Computer Science allowed me to share my knowledge and passion with undergraduate students. I developed and delivered the “Computer Applications for Business” course, which emphasized practical, real-world applications. By integrating tools like Tableau, Excel, and SQL, I helped students develop strong analytical and technical skills, while also covering essential programming languages such as Python, Java, and HTML. My teaching approach, which combines theoretical concepts with practical applications, has led to increased student engagement and improved comprehension of complex topics. Furthermore, I regularly collaborated with industry professionals to bring guest lectures and real-world projects into the classroom, ensuring that my students were exposed to the latest trends and challenges in the field. This teaching experience not only refined my communication and instructional skills but also reinforced my commitment to academic excellence and my desire to mentor the next generation of IT professionals.

My academic journey began with a Bachelor’s degree in Information Technology, where I gained a solid foundation in essential IT concepts, such as data structures, algorithms, database management, machine learning, cloud computing, cybersecurity, software engineering, computer networks, and operating systems. This foundation was further strengthened during my Master’s program, where I delved into advanced industry-related subjects, including data analytics, business forecasting, business data management, analytics for business intelligence, business analytical programming, and data analysis and visualization. The combination of these subjects has not only deepened my technical expertise but also equipped me with the ability to approach complex, real-world problems with a methodical and innovative mindset. Additionally, proficiency in programming languages like Python, Java, HTML, and SQL, alongside tools like Tableau, Power BI, and various cloud platforms, has prepared me to excel in both research and practical applications. This comprehensive academic and technical background positions me well to pursue a PhD in Computer Science, where I aim to contribute to cutting-edge research in areas such as artificial intelligence, cybersecurity, and data-driven decision-making.

Beyond academics, I have held leadership roles that have further shaped my character and skills. As General Secretary of the Student Union Council, which also served as the Anti-Ragging Committee at my university, I led 4,000 students, organized numerous cultural and technical events, and played a pivotal role in maintaining a safe and inclusive campus environment. Additionally, as the Management Head of the ACM Student Chapter, I further developed my leadership and organizational skills by overseeing various tech-focused initiatives and events. These roles provided me with invaluable experience in team

management, event coordination, and fostering a collaborative and supportive student community.

The best aspect of Columbia University's PhD program in Computer Science is its world-class faculty and the exceptional research opportunities it offers. Columbia is renowned for its cutting-edge research in cybersecurity, which aligns perfectly with my interests. The program provides a collaborative environment where I can work closely with leading researchers and have access to state-of-the-art resources. Columbia's location in New York City offers unique advantages, such as proximity to the tech industry, abundant networking opportunities, and easy access to numerous conferences, seminars, and workshops. The diverse and vibrant academic community at Columbia further enriches the experience, making it an excellent place for aspiring researchers like me to develop their careers. I am eager to contribute to and grow within such a dynamic program, confident that it will provide me with the tools and experiences necessary to achieve my long-term research aspirations.

With my academic background, research experience, teaching skills, and leadership roles, coupled with my high self-motivation for advanced studies and research, I am confident that I will add value to Columbia's esteemed Computer Science department while attaining personal and professional growth. I look forward to peer learning and interacting with students from diverse backgrounds, and I am excited about the prospect of contributing to groundbreaking research that will advance the field of cybersecurity. I am eager to pursue my career as a Security Architect in renowned multinational corporations in the U.S., and I believe that Columbia University's PhD program will be instrumental in helping me achieve this goal.