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Top Skills

Hugging Face
Gradio
Django

Languages

Hindi (Limited Working)
Bengali (Native or Bilingual)
English (Native or Bilingual)

Certifications

EverUp: Cyber Security
EverUp: Data Analytics
Succeeding in DevOps

Honors-Awards

Alexander of Bangladesh
Phi Theta Kappa Honor Society
Dean's List Roll of Honor
President's List Roll of Honor
Fund for attending Student
Conference on United States Affairs
(SCUSA) 71

Avijit Roy

Applied Computing & Data Specialist | Secure Systems, AI Research
& Digital Forensics | Empowering Education Through Technology |
Adjunct Lecturer @ John Jay College
New York, New York, United States

Summary

I bridge data, security, and applied AI to build impactful, real-world systems in education and public service.

Over the last three years, I've architected solutions at the intersection of research, mentorship, and production-grade development. At CUNY, I led efforts to automate verification across 10,000+ student records using C#/.NET, cutting validation time by 80%. At John Jay, I mentored undergraduates in secure session design using Django/PostgreSQL, while as a Graduate Research Assistant, I built live dashboards for human trafficking intel, securing PII with OAuth2, RBAC, and audit logging.

My focus is clear: combine research-grade rigor with scalable engineering to solve hard problems—whether streamlining multi-campus data workflows, safeguarding sensitive intel, or mentoring the next generation of engineers.

Currently, I'm expanding my work in AI at the Research Foundation of the City University of New York, developing NLP-based writing proficiency tools aligned with ACTFL standards, and applying prompt engineering for better data visualizations and insight delivery.

I believe technology should not just function; it should empower. My work reflects that.

Experience

John Jay College (CUNY)
1 year 4 months

Adjunct Lecturer
August 2025 - Present (4 months)
New York, New York, United States

As an Instructor for CSCI 272: Object-Oriented Programming in C++ at John Jay College of Criminal Justice, I design and deliver coursework that introduces students to both foundational and advanced programming concepts. My teaching covers functions, arrays, pointers, vectors, classes, inheritance, polymorphism, operator overloading, file handling, and exception management. Emphasis is placed on hands-on coding, structured problem-solving, and the application of object-oriented principles to real-world software engineering challenges.

Research Mentor | Software Development & Applied Computing

June 2025 - August 2025 (3 months)

New York, New York, United States

As a Research Mentor in the Department of Mathematics & Computer Science at John Jay College of Criminal Justice (CUNY), I guide undergraduate students in applied software development research, focusing on modern web technologies and real-world problem solving.

Currently mentoring a project built with Django and PostgreSQL, which focuses on developing a secure single-session authentication system to prevent concurrent logins across devices — a practical feature for improving user security in academic and enterprise systems.

My role involves:

- Supporting students in full-stack development workflows using Django, HTML/CSS, and JavaScript
- Teaching best practices in authentication, session management, and security hardening
- Guiding version control, deployment strategy, and debugging in collaborative research environments
- Helping students translate academic knowledge into real-world, research-driven applications

This mentorship enhances both technical proficiency and research thinking, fostering readiness for internships, graduate studies, and industry roles.

Graduate Research Assistant

January 2025 - May 2025 (5 months)

New York City Metropolitan Area

As a Graduate Research Assistant, I not only built real-time map visualizations and admin dashboards for human-trafficking investigations but also designed

and enforced robust security measures (OAuth2, encryption-at-rest, RBAC, audit trails) to safeguard sensitive PII and investigative intelligence.

Spearheading BlitzTips platform: Developed a .NET Core/API backend and React-style admin UI to collect, store, and visualize human-trafficking tips in real time.

Real-time map and dashboard: Integrated Google Maps API, SignalR, and Hangfire to deliver live location updates and background processing for thousands of reports.

Security & compliance: Implemented OAuth2-based authentication (Azure AD), TLS encryption in transit, field-level encryption at rest, and role-based access controls—ensuring sensitive PII and investigative data remain fully protected.

Data integrity & audit: Built comprehensive audit-logging and anomaly-detection routines to monitor system access patterns and flag potential tampering or unusual activity.

Collaborative development: Worked closely with cross-functional teams to design modular Razor/Bootstrap views for filtering, drilling into, and exporting demographic, vehicle, and observation data, streamlining investigative workflows.

Impact-driven insights: Delivered a flexible querying engine and exportable data feeds that empower law enforcement and policy stakeholders with actionable intelligence on trafficking trends.

Graduate Representative at the Student Government
August 2024 - May 2025 (10 months)
New York City Metropolitan Area

The City University of New York
6 years 2 months

Data Analyst
July 2024 - Present (1 year 5 months)
New York City Metropolitan Area

Office of International Students and Scholar Services

University Student Records Coordinator
June 2023 - June 2024 (1 year 1 month)

Greater New York City Area

- Utilizing third-party applications to support Registrar's offices and streamline student record management
- Conducting data analysis and maintaining accurate records on a university-wide scale
- Database management, ensuring data integrity and efficient retrieval of information
- Generating routine and ad hoc reports, providing insights through data analysis and visualization
- Interpreting policies and providing implementation guidelines to campus staff, students, and faculty

Completed projects:

- Developed a robust and efficient software application using C# and .NET Framework that automates the comparison of student data between multiple Excel files. Utilizing advanced data processing techniques, the software intelligently identifies and matches student records based on unique identifiers, providing accurate and reliable results. The application significantly reduces the manual effort and time required for data verification and generates comprehensive reports highlighting the findings.

IT Specialist & Data Analyst

October 2019 - June 2023 (3 years 9 months)

Greater New York City Area

- Proficient in creating complex SQL queries to retrieve data from various RDBMS sources.
- Conduct data comparisons and utilize visual representation techniques to analyze enrollment data effectively.
- Successfully cleansed a database containing more than 10,000 student records, ensuring data accuracy and integrity.
- Improved data analysis efficiency by implementing data visualization templates for enhanced reporting and decision-making.

During my tenure at The City University of New York, I served as an IT Specialist & Data Analyst, contributing to the effective management and analysis of student data. I specialized in creating complex SQL queries to retrieve data from multiple databases and utilized data visualization techniques to present insights to stakeholders. I successfully cleansed a large student record database, ensuring data accuracy and reliability. My contributions in improving data analysis efficiency through the implementation of data

visualization templates have led to enhanced reporting and informed decision-making processes.

Furthermore, I had the privilege of being selected as a member of the CUNY Guide Task Force. In this role, I contributed to the preparation of a guide for DSOs (Designated School Officials) involved in processing international student documents for admissions. It was a rewarding experience, allowing me to streamline processes and support the institution's international student community.

I am excited to embark on my new role as a University Student Records Coordinator, where I will oversee the management and maintenance of student records.

Research Foundation of The City University of New York AI Research Assistant

June 2025 - August 2025 (3 months)

New York City Metropolitan Area

Engaged in the development of an AI-based writing proficiency assessment system adhering to ACTFL guidelines. Leveraging strong programming skills in Python and NLP knowledge to format training data, contribute to model evaluation, and maintain comprehensive development documentation.

New York Jobs CEO Council Technology and Learner Engagement Specialist

August 2021 - May 2022 (10 months)

New York, United States

John Jay College (CUNY)

1 year 6 months

International Representative at the Student Government

June 2020 - May 2021 (1 year)

New York, New York, United States

At John Jay College of Criminal Justice, I served as the International Representative of the Student Council, working diligently to address the needs of international students and enhance their experiences at John Jay. In this role, I advocated for the concerns and aspirations of international students, ensuring their voices were heard and their perspectives were considered in decision-making processes. I fulfilled other obligations that came with the

elected office, actively contributing to the overall functioning of the Student Council.

In addition to my role as the International Representative, I also served on the Committee on Student Representation. This committee reviewed all student applications for the Student Council, College Council, and College-Wide Committees. As part of the committee, I played a crucial role in evaluating applications and selecting candidates who would represent the student body effectively. Furthermore, the committee proposed resolutions to address various issues affecting different student populations within the campus community.

During my time at John Jay, I also held the position of Alternate Delegate of the University Student Senate at the John Jay Student Council. As an Alternate Delegate, I actively participated in discussions, deliberations, and decision-making processes that shaped the policies and initiatives of the University Student Senate. Through this role, I had the opportunity to contribute to the larger university community while representing the interests and concerns of John Jay College students.

Through my multifaceted roles, I remained dedicated to fostering a supportive and inclusive environment for all students at John Jay College. I strived to make a positive impact on the student experience and ensure that diverse perspectives were valued and integrated into the fabric of our institution.

Vice President at International Students Association (I.S.A)

May 2020 - February 2021 (10 months)

New York, New York, United States

In my role as the Vice President of ISA (International Student Association) for the 2020-2021 session, I have taken on additional responsibilities and contributed to the growth and success of the organization. As the Vice President, I step in to fulfill presidential duties in their absence, ensuring the continuity and smooth functioning of the club.

A key aspect of my role is to oversee the process of updating and revising the club's constitution, ensuring that it remains up-to-date and aligned with the organization's goals and values. I also actively engage in recruiting new club members, fostering a vibrant and diverse community within ISA.

To promote ISA and attract new members, I coordinate the club's presence at various events such as club fairs, orientations, and other campus-wide activities. Additionally, I play an integral role in updating and maintaining our presence on digital platforms, including the John Jay App and various social media accounts. These efforts help to enhance our visibility, reach, and engagement with the broader student community.

I carry out other duties as assigned by the President, supporting their vision for the organization and contributing to the overall success of ISA. Together with the dedicated team, I strive to create a welcoming and inclusive environment for international students, fostering cross-cultural exchange and providing valuable support throughout their journey at John Jay.

Secretary at International Students Association (I.S.A)

December 2019 - April 2020 (5 months)

New York, New York, United States

In my role as a Secretary, I played a crucial role in ensuring the smooth operation of the club. I diligently maintained records of club members and events, efficiently notifying all members about upcoming meetings and events. Additionally, I was responsible for documenting and distributing detailed minutes of meetings, maintaining attendance records, and managing the club office space.

As part of my responsibilities, I proactively drafted agendas for general meetings and bi-weekly meetings, facilitating effective communication among club members. I also created memos as necessary, ensuring clear and concise communication within the club. Booking suitable spaces for club events and meetings was another crucial aspect of my role.

The primary objective of this club is to support international students during their transition to the John Jay community and foster cross-cultural exchange. By providing a platform for cultural understanding and engagement, we aim to create an inclusive and supportive environment for all members

University Student Senate

Alternate Delegate

June 2020 - May 2021 (1 year)

New York, United States

During my time at CUNY John Jay College, I was elected as an Alternate Delegate of the University Senate, representing the student body within the CUNY system. As an active participant in University Senate meetings, I played

a pivotal role in shaping policies and initiatives that impacted students across the university.

Working closely with student leaders, faculty, and administrators, I effectively advocated for the concerns and priorities of John Jay College students. By engaging in thoughtful discussions and sharing valuable insights, I contributed to decision-making processes that fostered an inclusive and student-centered environment within the University Senate.

In my role as an Alternate Delegate, I also facilitated communication and collaboration between our student body and the larger CUNY community. By gathering feedback, sharing updates, and actively participating in various committees and initiatives, I ensured that the voices of our diverse student population were heard at every level of governance.

Additionally, I leveraged my experience and knowledge gained as an Alternate Delegate to actively contribute to committees such as the Committee on Student Representation. Through my involvement in these committees, I worked towards advancing the interests of our students and proposing resolutions to address various issues affecting different student populations.

Serving as an Alternate Delegate of the University Senate deepened my understanding of higher education and strengthened my commitment to student advocacy. Witnessing the transformative impact of effective student representation, I dedicated myself to creating a positive and enriching university experience for all students at CUNY John Jay College.

Through my active involvement, collaboration, and dedication to student-centered decision-making, I worked towards fostering an inclusive environment that prioritized student needs and aspirations within the University Senate and CUNY as a whole.

United College of Aviation Science and Management

Lecturer in Computer Science

July 2018 - July 2019 (1 year 1 month)

Dhaka

Carpet Culture

2 years 5 months

Chief Technology Officer

April 2018 - July 2019 (1 year 4 months)

Greater New York City Area

As a Sr. Web Engineer and Sales Executive, I successfully developed a core team to manage the e-commerce backend and frontend. I implemented a SQL Server database for efficient inventory management and service tracking. Leveraging web analytics data, I made informed decisions to predict sales trends and identify marketing opportunities.

Recognizing my accomplishments and dedication, I was promoted to the position of Chief Technology Officer (CTO). As CTO, I managed a diverse team of web developers, SEO experts, digital marketers, e-commerce teams, and business development strategists. I provided guidance to ensure effective risk management and decision-making.

In my role as CTO, I achieved the following:

- * Restructured the company's technology department and e-commerce team to drive accelerated growth and improved resource utilization.
- * Implemented automation and streamlined processes, resulting in a 23% cost reduction.
- * Collaborated closely with the company president to align technology initiatives with overall business objectives.
- * Translated the president's vision into actionable strategies, leveraging technology to drive innovation and operational efficiency.

By spearheading transformative changes and optimizing resource allocation, I positioned the company as an industry leader. Our successful implementation of technology-driven advancements propelled us to consistently exceed targets and gain a competitive edge.

Sr. Web Engineer & Sales Executive

March 2017 - March 2018 (1 year 1 month)

Greater New York City Area

As a Senior Web Engineer, I had the following achievements:

- * Designed and developed six different websites using HTML5, CSS3, MySQL, and PHP.
- * Successfully transitioned the business from Opencart to Shopify, resulting in improved frontend UX.

- * Implemented product marketing strategies, including SEO techniques and leveraging marketplace functionalities.
- * Increased company exposure by 40% and achieved a 32% increase in sales through effective marketing efforts.

During my tenure at Carpet Culture, I played a pivotal role in transforming the company's online presence. Starting as a popular retail store for rugs, I led the initiative to establish an e-commerce platform. This strategic move allowed the company to effectively sell its products online, with the website now contributing to 75% of total sales.

In recognition of my skills and potential, I was mentored directly by the company's founder, Mr. Bhat, who appointed me as a Sales Executive. In this role, I implemented innovative marketing ideas and strategies, resulting in a significant 32% increase in sales. Working closely with Mr. Bhat, I gained valuable insights into effective sales techniques and honed my abilities as a sales professional.

In addition to my sales responsibilities, I managed a team of developers and oversaw the company's international production houses across three different countries. This involved coordinating and aligning the efforts of team members located in various locations to ensure smooth operations and efficient production processes.

My diverse range of experiences and achievements in web development, sales, and team management have equipped me with a well-rounded skill set. Now, as I transition into the role of Chief Technology Officer (CTO), I am poised to drive technological advancements and operational excellence within the company.

Mapping Bangladesh Community

Executive Manager

July 2013 - March 2017 (3 years 9 months)

Bangladesh

I actively contributed to the development of the country map of Bangladesh through my involvement with the Mapping Bangladesh Community and my participation in Google Map Maker. As a dedicated mapper, I played a key role in organizing and coordinating the efforts of fellow mappers across Bangladesh.

Here's an elaboration of my involvement:

Mapping Bangladesh Community:

- Collaborated with fellow mappers in the Mapping Bangladesh Community to contribute to the accurate and comprehensive mapping of Bangladesh.
- Actively participated in mapping initiatives, focusing on various regions and locations within the country.
- Engaged in discussions and knowledge-sharing sessions to enhance mapping techniques and ensure consistency in map data.

Google Map Maker:

- Utilized Google Map Maker as a powerful tool to add and update geographical information on the map of Bangladesh.
- Contributed to the mapping of significant places, roads, landmarks, and other essential features, ensuring that the map reflected the dynamic nature of the country.
- Verified and moderated mapping contributions from other mappers, ensuring the accuracy and quality of the map data.

Through my involvement in the Mapping Bangladesh Community and my dedication to Google Map Maker, I actively contributed to the development and improvement of the country map of Bangladesh. By collaborating with fellow mappers and utilizing innovative mapping techniques, I played a part in creating a comprehensive and reliable map resource for the country.

Carpet Culture

Web Developer Internship

May 2016 - August 2016 (4 months)

Greater New York City Area

During my 4-month Web Developer Internship at Carpet Culture, I made significant contributions to the company's online presence and overall success. Here are some notable achievements:

* Designed and developed over 20 landing pages using HTML5 and CSS3, catering to niche networking. These visually appealing and user-friendly pages effectively showcased the company's offerings and engaged target audiences.

* Played a key role in increasing brand awareness by designing compelling digital content. Through my creative designs and strategic implementation,

I contributed to enhancing the company's visibility and attracting a wider audience.

* Implemented robust MySQL databases, containing more than 100,000 records, to manage critical data. By incorporating search, edit, add, and delete functionalities, I ensured efficient data handling and seamless user experiences. This was achieved using PHP, HTML5, and JavaScript.

* Led the design and development of an E-Commerce site using Opencart store management. Leveraging my expertise, I also created custom code to enhance the site's functionalities. These enhancements resulted in a remarkable 200% increase in sales, showcasing the impact of my contributions.

Throughout my internship, I worked closely with the team at Carpet Culture, collaborating on various projects and utilizing my technical skills to drive positive outcomes. These achievements underscore my ability to deliver results and contribute to the growth and success of the company.

Bangladesh Betar

Debater

October 2011 - August 2013 (1 year 11 months)

Population and Health Department

Weekly Debate on Social Awareness Issues

United College of Aviation, Science & Management

IT Officer & Business Development Manager

June 2011 - August 2013 (2 years 3 months)

Uttara, Dhaka

Education

John Jay College (CUNY)

Bachelor's degree, Computer Science and Information Security · (2019 - 2021)

ASA College

Associate of Science (AS), Computer Programming · (2016 - 2017)

John Jay College (CUNY)

Advanced Certificate, Applied Digital Forensic Science (CAD4SCI) · (August 2024 - December 2025)

John Jay College (CUNY)

Master of Science - MS, Digital Forensics and Cybersecurity · (August 2024 - June 2026)