Priyanka Nath

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Education

Stony Brook University *(SUNY Stony Brook)* – New York, USA *August, 2019 - Present*
Master of Science, Computer Science *Current GPA: 3.28 / 4.0*

KIIT University *(formerly Kalinga Institute Of Industrial Technology)* – Bhubaneshwar, India *August, 2015 - July, 2019*
Bachelor of Technology, Information Technology *8.79 / 10.0*

Experience

Goldman Sachs Group, Inc. – New York City *July, 2020 - August, 2020*
Summer Analyst, Consumer and Investment Management Division.

Amazon.com, Inc. – Bengaluru, India *March, 2019 - August, 2019*
Software Development Engineering Intern, Amazon Web Services.

Indian Statistical Institute – Kolkata, India *Summer 2018*
Advisor - Prof. Bimal Kumar Roy
Research Intern at R. C. Bose Centre for Cryptology and Security, Indian Statistical Institute.

Indian Statistical Institute – Kolkata, India *Summer 2017*
Advisor - Prof. Ansuman Banerjee
Research Intern under the *Summer Internship Program in Cryptology 2017*, R. C. Bose Centre for Cryptology
and Security, Indian Statistical Institute (funded by Microsoft Research India).

Selected Projects

Health Observability Dashboard for Elasticsearch Clusters – Goldman Sachs *July, 2020 - August 2020*
- Designed and built a Java based RESTful microservice to collect and expose health metrics across the
Elasticsearch cluster stack owned by the asset management data engineering team.
- Built an HTTP based data visualization dashboard with rule-based summary metrics to derive actionable
system health reports for the operations team.

API-Level Metrics for Amazon Elasticsearch Service – Amazon Web Services *March, 2019 - August 2019*
- Evaluated existing metrics for Amazon Elasticsearch Service (search-engine as a service, part of Amazon Web
Services) and their limitations.
- Prepared and presented a comparative study in support of newly proposed metrics based on requirements,
scalability, resource cost, performance impact and data pipeline latency.
- Designed and implemented 19 new API-level metrics for monitoring, faster diagnosis and root-causing of
problems in clusters running the service, thereby improving service availability and customer experience.

Smart IoT Climate Control System – MS Project *January 2020 - Present*
- Desiged and developed an IoT based climate control system leveraging different machine learning techniques
for damper actuation and improved energy consumption.
- Applied reinforcemt learning to optimize HVAC operations inside the house based on outside environmental
factors like temperature, humidity, etc and human habits and occupancy.

Drug Risk Analysis using ANNs *August 2018 - May, 2019*
- Applied Artificial Neural Networks (ANN) to classify an individual as a drug/alcohol user, based on a
five-factor personality model.
- Experimented with network configurations to predict the last time of use of drugs with 71.9% accuracy and
alcohol with a 49.1% accuracy. Optimized further with k-nearest neighbors classification.

Vulnerability Analysis of Linux System Calls – Indian Statistical Institute *May, 2017 - July, 2017*
- Developed an operating system call pattern matching and analysis application for Linux to detect software
vulnerabilities.
- Using inputs generated by an automated fuzzer, American Fuzzy Lop (AFL), to detect malicious binaries.
- Summer internship project, funded by the Defence Research and Development Organisation, Govt. of India.

Technical Skills

Programming – Coded mainly in **C, Python and Java.** Proficient in coding with C++.
Web – HTML, CSS, JavaScript, Spring Boot, D3.   **OS –** Linux, Windows.
Machine Learning Tools – scikit, MATLAB, R, TensorFlow, sklearn, keras, PyTorch, matplotlib, seaborn.
Development Tools – SQL (MySQL, Oracle), Latex, Unity.

Relevant Courses Taken

Data Science Fundamentals, Computer Vision, Natural Language Processing, Cryptography, Linear Algebra, Data Structures & Algorithms, Object Oriented Programming, Probability & Statistics, Discrete Mathematics, Computer Networking, Operating Systems, Database Management Systems.

Publications

Kumari, Divya, Priyanka Nath, Sumran Kilam, and Aleena Swetapadma. **"Volatile Substance Abuse: A Nearest Neighbor Based Analysis."** In International Conference on Innovative Technologies in Engineering (ICITE), 2018.

Kumari, Divya, Sumran Kilam, Priyanka Nath, and Aleena Swetapadma. **"Prediction of alcohol abused individuals using artificial neural network."** International Journal of Information Technology 10, no. 2 (2018): 233-237.

Nath, Priyanka, Sumran Kilam, and Aleena Swetapadma. **"A machine learning approach to predict volatile substance abuse for drug risk analysis."** In Research in Computational Intelligence and Communication Networks (ICRCICN), 2017 Third International Conference on, pp. 255-258. IEEE, 2017.

Honors & Achievements

- Secured 4th position among 11,000 participants in the 4th CSI National Programming Contest 2017 organised by the Computer Society Of India.

- Won 2nd place in HelloWeb Hackathon 2016 hosted by the Mozilla BBSR Club by designing a teaching kit to introduce kids to programming.

- Secured a perfect score (100%) in Mathematics in statewide Secondary Examination, 2013 among 1,020,000 students.

- Awarded Chitroprobha Upadhi Certification by Bengal Music College, Kolkata, India in 2012 on completing a 6–year course on Painting.