Priyanka Nath

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Education

KIIT University *(formerly Kalinga Institute Of Industrial Technology)* – Bhubaneshwar, India *July, 2015 - Present*
Bachelor of Technology, Information Technology *Current GPA: 8.64 / 10.0*

South Point High School – Kolkata, India

All India Senior School Certificate Examination, CBSE (Grade 12) *June, 2015*
Stream: Science with Computer Science as additional subject

Secondary Examination, WBBSE (Grade 10) *May, 2013*

Experience

Indian Statistical Institute – Kolkata, India *May, 2017 - July, 2017*
Advisor - 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).

Projects

Linux System Call Analysis – Indian Statistical Institute *May, 2017 - July, 2017*
- Developed a linux system call pattern matching application in Python which uses American Fuzzy Lop(AFL) generated inputs to check for vulnerabilities in a executable software binary (funded by the Defence Research and Development Organisation (DRDO), Government of India).

Principal Component Analysis using GPUs
- Implemented dimensionality reduction by applying PCA on Iris dataset using CUDA-C.

Vigenère Cipher Decoder
- Created a Vigenère Cipher Decoder in Python which predicts 5 probable keywords given the encrypted ciphertext.

Rivest Cipher 4 (RC4) Implementation
- Implemented the stream cipher RC4 in Python and showed that the keystream generated by the RC4 is biased is varying degrees towards certain sequences.

Naive Bayes Classifier
- Implemented a Naive Bayes Classifier from scratch for handwritten digits from MNIST digit dataset.

Bookmarkz: A Social Bookmarking App in Python
- Developed a social bookmarking app using Django web framework where a user can create an account, share bookmarks, vote on shared bookmarks, etc.

SpaceTurtle: An Introduction to Turtle Programming
- Designed a teaching kit for a Mozilla Hackathon, using Python's turtle library, to introduce kids to programming and encourage them to solve problems through logical thinking.

MysticSquare: An Android Game
- Created a basic Mystic-Square(also known as 15 puzzle) game for Android using Android Studio.

Technical Skills

Programming – Coded mainly in **C, Python.** Proficient in coding with C++ and Java.
Web – HTML, CSS, Javascript. **OS –** Linux, Windows.
Developement Tools – Android Studio, Android SDK, SQL (MySQL, Oracle), scikit, Matlab, Latex.

Relevant Courses Taken

Linear Algebra, Data Structures & Algorithms, Object Oriented Programming, Probability & Statistics, Discrete Mathematics, Machine Learning (by Andrew Ng), Cryptography I (by Dan Boneh), Computer Networking.

Honors & Achievements

- Secured 4^{th} position in the 4th CSI National Programming Contest among 11,000 participants.
- Won 2^{nd} place in HelloWeb Hackathon 2016 hosted by the MozillaBBSR Club by designing a teaching kit to introduce kids to programming.
- Qualified for Round 1 of the Facebook HackerCup 2017.
- Secured the highest grade "O" in Object Oriented Programming in B. Tech. 2nd Semester & Web Technology in 3^{rd} Semester.
- Secured a perfect score (100%) in Mathematics in state-wide 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.
- Selected as one of 20 student judges from MP Birla group of schools for the cultural committee MP Birla Puja Utkarsh Samman 2014.