# Shivani Singh

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shivani-1521.github.io

## Education

2016-2021 **Birla Institute of Technology and Science, Pilani, India**.
Bachelor of Engineering (Hons.) in Electrical and Electronics (Integrated Dual Degree)

2014-2015 **St. Michael's High School, Patna, India**.
All India Senior School Certificate Examination (C.B.S.E.Class12), Percentage: 94.4/100

## Research Experience

Jan - July 2021 **Max Planck Institute for Informatics**, *Bachelor's Thesis*, Dr. Anja Feldmann.
Measuring the Internet from various vantage points to study traffic features. And anticipating shifts in DNS architecture and suggesting improvements in web performance and security and privacy of the user.

## Projects

April - June 2020 **DNS Privacy**, *Remote project*, Dr. B. Chandrasekaran, Max Planck Institute for Informatics.
Explored DNS architecture for securing requests from on-path pervasive monitoring. Inspected privacy related implications of DNS resolution at the client stub resolver.

Jan - March 2020 **Deploying containerized applications**, *Remote project*, Dr. B. Krishnamachari, USC Viterbi.
Experimented with running the dispersed computing software Jupiter on Common Open Research Emulator. Added the Docker service and linked Jupiter's components deployed inside and outside a Kubernetes cluster.

Mar - April 2019 **Support Google Cloud backend in CoreDNS**, *GSoC Application*, Dr. Yong Tang, CoreDNS.
Feature exposes cloud vendor specific endpoint to clusters managed by Kubernetes. Created better access for retrieving resource records through Google Cloud API.

May - July 2018 **Developing the instructional operating system PintOS**, *Course project*.
Implemented syscalls to support user programs and modified shell to resolve program names.

## Work Experience

May - July 2019 **American Express**, *SWE Intern*, Bangalore.
Implemented data access layer for Redis cache with inherent concurrency support. Developed interface for fast and buffered Prometheus metrics.

May - July 2018 **Power Grid Corporation of India**, *Summer Intern*, Hyderabad.
Created models for minimum bid forecast of power transmission utilities. Analyzed gas insulated transformers.

## Publication

Submitted 'Machine Learning Assisted Security and Privacy Provisioning for Edge Computing: A Survey', **Shivani Singh**, Razia Sulthana, Tanvi Shewale, Vinay Chamola, Abderrahim Benslimane, and Biplab Sikdar, (IEEE Internet of Things Journal 2021).

## Technical Skills

Languages - Golang, C/C++, Python, Matlab.

Tools - Docker, Kubernetes, Prometheus, CoreDNS, Geth, Wireshark, ns-3.

Courses - Data Structures and Algorithms, Internet of Things, Operating System, Object Oriented Programming, Microprocessors and Interfacing, Probability and Statistics.

## Academic Achievements

2019 Awarded to attend Grace Hopper Celebration India, Asia's largest event for women in computing.

2019 1st Runner-up Paper Presentation in Apogee, presented 'Improved Paxos Consensus Algorithm'.

2018 Recipient of BITS Pilani alumni grant.