

# Himanshu Singh

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## Technical Skills

### Languages

0 LOC —————> 7500 LOC

Python • JavaScript • HTML • CSS

C • C++ • MySQL

BASH • Java

LaTeX • PHP

### Programming

• **Libraries and Frameworks:** Flask, Django, Pandas, Numpy, Skleran, Matplotlib, BeautifulSoup, Selenium, NetworkX, Tshark, Scapy, Keras, PyTorch, OpenCV, NLTK.

• **Web and App Dev :** React, React Native, Redux, Bootstrap, jQuery, Node.js, MongoDB, express.js.

• **Others :** Git, Docker, Raspberry pi3, Arduino UNO, ESP8266, Latex.

## Extra Curricular

• Gold Medal in Football, AARAMBH'18 (Intra Institute Sports Fest of IIIT-NR).

• **#1/50** in Game of Codes (Competitive coding event of IIIT-NR).

• Core Organizer of Technovate 2k19 (Annual Technocultural fest of IIIT-NR).

• Student Coordinator of the Training and Placement cell of IIIT- NR.

## Education

Aug 2021 - Present **Master of Science, Computer Science (MSCS)** Texas, USA  
Texas A&M University, College Station

- **Specialization:** Artificial Intelligence & Machine Learning
- Eligible to intern in the U.S. with CPT.

Aug 2016 - Jul 2020 **B.Tech, Computer Science and Engineering** Chhattisgarh, India  
International Institute of Information Technology, Naya Raipur

- **CGPA: 9.30 / 10.00** (10.00 is best).
- Was Awarded the State Government funded Academic Excellence Scholarship covering the entire tuition fee for B.Tech.

## Publications

• L Csikor, H Singh, DM Divakaran, and MS Kang, "Privacy of DNS-over-HTTPS: Requiem for a Dream?", 2021 IEEE European Symposium on Security and Privacy (IEEE EuroS&P 2021).

• H. Singh, V. Pallagani, V. Khandelwal and U. Venkanna, "IoT based smart home automation system using sensor node", IEEE RAIT 2018.

## Research Projects

Jan 2020 - Jul 2020 **Privacy of DNS-over-HTTPS (DoH)** National University of Singapore

- Developed a mechanism to identify DoH traffic from the encrypted web traffic traces using Machine Learning techniques.
- Achieved an accuracy of **97.6 %** in the open-world setting.
- Developed an on-path filter prototype to identify and block incoming DoH traffic in real time.
- **Tech Stack:** Python (Scikit-learn, Keras, Tshark), Docker .

Jun 2020 - Oct 2020 **Psychological Analysis of Covid-19 Tweets** University of Brighton

- Led the team in collection, cleaning, and organisation of 10 million+ tweets from 19 different countries in 7 different languages.
- Performed Time-Series analysis on the dataset to discover psychological trends across 19 countries.
- **Tech Stack:** Python (Selenium, Pytorch, NLTK, Pandas).

Jan 2019 - Jun 2019 **Image Caption Generation using Deep Learning** IIIT-Naya Raipur

- Implemented the 'Show and Tell' captioning model from scratch using keras and modified the layout of the convolutional neural network to boost performance.
- **Tech Stack:** Python (Keras, OpenCV, Pandas).

Apr 2021 - Jul 2021 **DeliverBud: Hyperlocal Delivery App** Chhattisgarh

- Developed a cross-platform mobile application for a hyper-local delivery startup to improve the local delivery ecosystem during the COVID-19 pandemic.
- **Tech Stack:** React Native & Firebase.

## Work Experience

Jan 2020 - July 2020 **Research Intern** National University of Singapore

- Lead the development of a mechanism to distinguish DNS-over-HTTPS packets from encrypted web traffic at NUS-Singtel Cybersecurity R&D Lab and achieved an accuracy of **97.6%**.

Aug 2020 - Jul 2021 **Business Analyst** Deloitte USI, Bangalore

- Part of the Agile Workforce with experience in Oracle Fusion Cloud, SQL and JavaScript (Node.js).