

# Akshay Nayak

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## EDUCATION

- **National Institute of Technology, Warangal (NITW)** Telangana, India  
*Bachelor of Technology in Computer Science & Engineering,*  
CGPA: 7.23/10  
Undergraduate Project Advised by: Prof. M. Srinivas. *Dept. of Computer Science and Engineering* Jul. 2017 - Jul. 2023
- **Prince Academy, Sikar** Rajasthan, India  
*All India Senior School Certificate Examination (AISSCE),*  
Percentage Scored: 90.6% Jul. 2015 – Jun. 2017
- **St. Mary's Sr. Sec. School, Sikar** Rajasthan, India  
*Council for the Indian School Certificate Examination (CISCE),*  
Percentage Scored: 92.5% Jul. 2005 – Jun. 2015

## PUBLICATIONS

- Akshay Nayak, Pruthvi Taranath, "Behavioral Data Science in financial services", accepted in The Cambridge handbook of Behavioral Data Science edited by Ganna Pogrebna, Thomas Hills. Cambridge University Press. 2023.
- Murukessan Perumal, Akshay Nayak, R. Praneetha Sree, M. Srinivas, "INASNET: Automatic identification of coronavirus disease (COVID-19) based on chest X-ray using deep neural network", ISA Transactions, 2022.
- Dr. M Srinivas, S. Saurav, Akshay Nayak, and Murkeshan A P. "Multi Features Based Facial Expression Recognition", published in Machine Learning Algorithms and Applications book chapter, Wiley Press, 2020.
- Dr. M. Srinivas, Akshay Nayak, and Abhishek Bhatt. 2019. "Forged File Detection and Steganographic content Identification (FFDASCI) using Deep Learning Techniques", In the workshop proceedings of the CEUR working notes (CEUR-WS). Collocated with CLEF 2019. Vol 2380. September 9-12, 2019. Lugano, Switzerland.

## PROFESSIONAL EXPERIENCE

### Mastercard

Software Engineer II

Pune, India

Mar. 2023 – Present

- **Business Unit: Data & Services Technology**
- Orchestrated the planning and execution of 4+ innovative features, ensuring their development and successful launch.
- Implemented a crucial feature aimed at evaluating significant differences between two groups across diverse attributes. This feature facilitates the refinement of various strategies and algorithms applied, addressing biases to achieve an improved fit. Contributed to the entire process, from algorithm formation to development, for the flagship product Test & Learn.

Software Engineer I

Jul. 2021 – Feb. 2023

- Implemented diverse modeling features from algorithm formation to development for the flagship product Test & Learn.
- Engaged in extensive work and exploration of React.js implementation, alongside a comprehensive exploration of various statistical models. This encompassed interaction modeling, performance modeling, and propensity modeling. Applied advanced statistical techniques such as linear regression, clustering, and segmentation, resulting in a remarkable 30% increase in customer engagement.

### Setu

Software development engineer Internship in Automation & QA

Bengaluru, India

May 2019 – Jul. 2019

- Analysed an OAuth 2.0 protocol & streamlined an authentication and authorization proof of concept for SETU collect.
- Prepared and submitted reports and other documentation to assist development team members.

### Microsoft Academia Accelerator

Codefundo++ 2018 Institute Winner

Hyderabad, India

Oct. 2018 – Feb. 2019

- **Mentor :** Sudheesh Singanamalla, Ph.D. student, University of Washington, Seattle.
- Created a web application for natural disaster management, enabling seamless communication in disrupted networks. Implemented distributed LTE network protocols from dLTE research paper using Raspberry Pi 3, ensuring dependable connectivity solutions.

## RESEARCH EXPERIENCE

### The Alan Turing Institute

Machine Learning Researcher(Remote)

London, UK

Jan. 2021 – Jul. 2021

- **Advisor:** Professor Ganna Pogrebna, ESRC / Turing fellow, Behavioural Data Science, The Alan Turing Institute.
- Explore the differences in customer perceptions of finance and fin-tech companies;
- Construct a predictive model of customer satisfaction using company characteristics and customer context-dependent sentiment; and offer a better way of understanding customer feedback using unstructured customer data.

### National Institute of Technology, Warangal

Machine Learning Researcher

Telangana, India

Jul. 2019 – Aug. 2020

- **Advisor:** Professor M. Srinivas, Assistant Professor, Department of Computer Science and Engineering, NIT Warangal.
- Conducted research to identify an optimal method for detecting COVID-19 infections using deep learning techniques.
- Formulated an efficient methods for detecting modified and forged files, as well as steganographic content identification.

### Computational Intelligence Lab, Indian Institute of Science(IISc),Bangalore

Summer Research Fellow

Karnataka, India

May. 2018 – Jul. 2018

- **Advisor:** Dr. S.N. Omkar, Chief Research Scientist, IISc Bengaluru.
- Spearheaded a groundbreaking system for disguised person identification using facial landmarks and motion signatures. Created an annotated dataset with 3072 videos, each subject performing activities in 16 disguises and 2 motion signatures (walking and running) with 6 different positions.
- Utilized MTCNN and Partial Affinity Field networks for facial landmark recognition and binary stick frame video conversion. Designed an architecture using 3D-RESNET network for precise pose estimation and individual identification. Dataset includes 16 classes, each with 192 videos, featuring 8 men and 8 women aged 17-21.

## **PROJECTS**

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### **AGNI**

*Smart India Hackathon, 2020*

*Feb. 2020 – Aug. 2020*

- Led the design and implementation of a Django application dedicated to combating corruption and bribery systems in India.
- Developed an Android application to optimize user experience, ensuring seamless interaction with the platform.
- Demonstrated exemplary leadership and technical expertise by spearheading a 6-member team, resulting in the team being recognized as the *national winner* among 37,000+ projects nationwide.

### **BRAHMASTRA**

*Microsoft Codefundo++ Hackathon, 2019*

*May. 2019 – Sep. 2019*

- Built an azure blockchain based e-voting system proof of concept using ECDSA & RSA cryptographic schemes.
- Captained a team of 3 technical enthusiasts in the development of a secure E-voting application, utilizing advanced cryptographic algorithms to authenticate voters and enable secure voting for candidates.
- Our project clinched the *2nd runner-up* position at institute.

### **GARIMA**

*Microsoft Codefundo++ Competition, 2018*

*Oct. 2018 – Feb. 2019*

- Innovated a web application for natural disaster management in low-network areas, utilizing USSD & SMS to link victims with rescue teams.
- Engaged in a collaborative initiative with the Microsoft Research & Development team as a distinguished participant in the AXLE program. I was selected as one of the top 50 individuals out of a competitive pool of over 5500+ participants from all around india.
- Led a dynamic 3-member team in successfully implementing a dLTE network using Raspberry Pi technology. Our project stood out as the *institute winner*, triumphing over 110+ submissions.

### **INK Makers makeathon**

*INK Makers makeathon, 2018*

*Sep. 2018 – Sep. 2018*

- Pioneered an innovative Django application leveraging past years of crime data analysis to dynamically recommend the safest routes in real-time.
- Led a proficient 3-member team to *victory in a prestigious makeathon* challenge, showcasing leadership and technical acumen. Engineered a solution that not only ensures personal safety but also demonstrates a deep understanding of data-driven decision-making in a real-world context.

## **POSITIONS OF RESPONSIBILITY & VOLUNTEERING**

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### **Co-Founder & General Secretary**

*Big Data, Analytics & Consulting Cell, NIT Warangal*

*Jan. 2020 – Jul. 2021*

- Served as the lead member of the Big Data & Analytics Club, spearheading the establishment of a research-oriented culture within our institute. Organized a series of workshops covering diverse areas of machine learning, data science, and analytics to enhance knowledge and skills among members.

### **Additional Secretary**

*Electronics Amateurs & HAM Club, NIT Warangal*

*Apr. 2020 – Jul. 2021*

- Educated enthusiastic students about electronics and robotics fundamentals. Planned, coordinated, and oversaw a variety of workshops, lectures, projects, and competitions.

### **Web Developer**

*Web and Software Development Cell (WSDC), NIT Warangal*

*Aug. 2018 – Aug. 2019*

- Oversaw institute website management and developed a django module for WSDC portal's in-house result section as a software developer.

### **Event Manager**

*TechFresh, Technozion'18, NIT Warangal*

*Aug. 2018 – Oct. 2018*

- Took on the role of event manager for a high-participation event, making it a highlight during our institute's technical fest, Technozion.

## **SKILLS**

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**Technical:** Python, C++, C, Javascript, Typescript, ReactJS, Latex, SQL

**Tools & Libraries:** Django, TensorFlow, Keras & OpenCV

**Interests:** Machine Learning, Computer Vision, Computer Networks, Distributed Systems, Robotics & Automation

**Languages:** English, Hindi.

## **AWARDS & ACHIEVEMENTS**

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- National Winner at Smart India Hackathon (SIH) 2020, an event organized by the Government of India in August 2020.
- Selected for the Microsoft Learn Student Ambassadors Program in August 2020.
- Second Runners-up at the Microsoft Codefundo++ 2019 Hackathon in October 2019.
- Institute Winner at the Microsoft Codefundo++ 2018 Hackathon held in October 2018.
- Institute Winner at the INK Makeathon 2018, held in September 2018, under the theme "Build for Change."
- Shortlisted for the Kishore Vaigyanik Protsahan Yojna (KVPY) Fellowship Award 2016 – IISc Bangalore.
- Bronze Medalist in the International Taekwondo Championship organized by WTF & TAFISA.