

# Aayushma Pant

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## SUMMARY

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Results-driven research engineer with expertise in artificial intelligence, data science, and computer vision. Skilled in various programming languages and tools, with a passion for data and AI. Highly organized and able to manage time effectively while multitasking to achieve project goals. Quick learner with solid research skills and a self-driven nature to stay up-to-date with the latest advancements in the field.

## PROFESSIONAL EXPERIENCE

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### ANGELSWING INC.

Seoul, South Korea

#### Computer Vision Research Engineer

Aug 2021 – Present

- Developed the MVP for 3D mesh generation integrating computer graphics and Structure-from-Motion (SFM) technology.
- Designed and implemented an algorithm for real-time aerial image stitching, leading to a 50% decrease in time complexity and a 40% improvement in processing speed utilizing computer vision techniques, GIS, and Mathematical logic.
- Developed a complete pipeline for machine learning models targeting aerial ground control point (GCP) detection, reducing manual data processing time by 65% for the CS team.
- Created an MVP of UAV images and video visualization system, resulting in a 25% increase in user engagement compared to previous systems using Three.js and 3D Vision.
- Designed and developed an Inspection system using Machine Learning (ML), resulting in a 60% improvement in inspection accuracy and operationalized it through MLOPs for automated training and monitoring.
- Led research team by initiating, collaborating, and guiding research projects resulting in a 20% increase in project development efficiency and contributing to the achievement of 90% of OKR targets.
- Represented the company as a keynote speaker and trainer at various industry events and conferences, reaching over 1000 industry professionals and enhancing company visibility by 50%.

### SMART CHELI

Lalitpur, Nepal

#### Lead Educator

Apr 2021 – Present

- Taught Python programming lessons to a classroom of almost 20 students, resulting in increased student engagement by utilizing effective teaching methods and resources.
- Developed a comprehensive and practical curriculum for Python programming, resulting in improved playful student learning and satisfaction by researching the best course material and organizing it into a well-structured and engaging format.
- Mentored young girls on internet surfing, Scratch programming, and problem-solving skills, resulting in increased confidence in the digital space by guiding them in developing their skills and addressing any challenges they faced.

### ALPHA AI

Haryana, India

#### Data Science Intern

Nov 2020 – Mar 2021

- Collaborated with a team of engineers to develop a recommendation system application, to enhance algorithms and boost user engagement and satisfaction.
- Developed a functional barcode detection research project using computer vision techniques (YOLO5).

## EDUCATION

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### TRIBHUVAN UNIVERSITY, INSTITUTE OF ENGINEERING

Thapathali, Nepal

#### Bachelors of Electronics and Communication Engineering

Nov 2017 – Apr 2022

**Courses:** Applied Mathematics, Calculus, Linear Algebra, Probability & Statistics, C,C++, Data Mining, Physics, Digital Logic, Signal Processing, Computer Graphics, Discrete Structure, Computer Organization and Architecture, Microprocessor

- Committee member of the Robotics and Automation Center.
- Certified in multiple courses and received scholarships for academic excellence and accomplishments.
- Conducted workshops on AVR, Arduino, Circuit Design using Kicad, and Artificial Intelligence.

## KEY SKILLS

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- **Key Tech Stack:** Machine Learning, Deep Learning, Computer Vision, Data Science, Applied Mathematics
- **Computer Languages:** Python, Keras/TensorFlow, Pytorch, SQL, Three.js, JavaScript, Flask, Django, HTML5
- **Cloud Stack:** AWS S3, ECR, AWS Lambda, AWS API Gateway, SQS
- **DevOps/MLOps Stack:** Docker, Bash Script, DVC, MLFlow, Airflow, CML
- **Tools:** QGIS, GIS, Git/GitHub

## ADDITIONAL SKILLS

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- Team Work
- Research
- Documentation
- Communication
- Task Estimation and Breakdown
- Presentation

## RESEARCH PUBLICATION

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### NEPALI VOICE-CONTROLLED HOME AUTOMATION SYSTEM

This project aims to use Nepali Speech for automating home applications. It uses STFT for audio feature extractions, then CNN-LSTM Neural Network for Speech Processing, and MQTT technology for communication between Database and Sensors. The output is displayed through the Mobile App.

## PET PROJECTS/STUDENT PROJECTS

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### CHATTER PATTERN – AN AI WEB APP CHATBOT

A web application that uses AI to answer queries on relevant topics like agriculture, health, economics, etc.

### DEEP FAKE AUDIO VIDEO DETECTION SYSTEM

This research work focuses on identifying and detecting Deepfake videos and audio. DCT is implemented to extract image features, passed on a multi-layered CNN architecture network and original video images. Likewise, filter banks and MFCC are used for audio processing, followed by CNN architecture to detect real and fake audio.

### SUDOKU SOLVER USING COMPUTER VISION

It fetches an image of unsolved sudoku and solves it using the OpenCV, CNN, and backtracking algorithm.

## AWARDS

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### College Topper: Academic Excellence Award

Bachelor's Degree, Institute of Engineering

### Semester Topper: Academic Excellence Award for three semesters

Bachelor's Degree, Institute of Engineering,

## PROFESSIONAL AFFILIATIONS

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### NEPAL ENGINEERING COUNCIL

Registered 'A' grade Engineer,

Registration. No. 9222

## CERTIFICATIONS

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**Deep Learning  
Specialization**

*Deeplearning.ai,*

**Machine Learning**

*Coursera,  
Stanford*

**Generative AI  
with LLMs**

*Deeplearning.ai*

**Data Analytics  
Internship**

*KPMG*