

# AYUSH KUMAR SHAH

## Computer Engineer

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Kathmandu, Nepal

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## EXPERIENCE

### GRADUATE RESEARCH ASSISTANT

#### Rochester Institute of Technology

Aug 2020 – Present Rochester, New York

- One of the members of the MathSeer project, which is a system to make finding mathematical information easier. I am conducting research under Prof. Richard Zanibbi to create innovative search engines, interfaces, and algorithms for extracting and recognizing math.

### MACHINE LEARNING ENGINEER

#### Fusemachines Nepal

Jun 2019 – Aug 2020 Kathmandu, Nepal

- Worked on several client-based ML projects from the US as well as internal ML projects of the company in the field of NLP, Computer vision, Recommendation systems. Worked on the whole ML pipeline: data collection, data cleaning and pre-processing, model building, tuning hyperparameters, model training, and model evaluation.
- Involved in design, review, and refinement of content - reading material, quizzes, assignments, and projects for Fusemachines AI Education Programs - "Foundations in AI: Mathematics for AI", "Micro Degree™ in Artificial Intelligence: Machine Learning, Computer Vision"

### COMPUTER SCIENCE INSTRUCTOR

#### Samriddhi College

Jan 2020 – Present Kathmandu, Nepal

- Teaching the course "Foundations in AI: Computer Science and Mathematics" to undergraduate BSc.CSIT students.

## EDUCATION

### PhD in Computing and Information Sciences

#### Rochester Institute of Technology

Aug 2020 – Present Rochester, New York

### Bachelors in Computer Engineering

#### Kathmandu University

Aug 2015 – Oct 2019 Kavre, Nepal

- CGPA: 3.96/4

## TECHNICAL SKILLS

Language	Python, R, Matlab, C/C++, SQL, Android
Libraries	Scikit-Learn, Pytorch, Tensorflow, Keras, NLP, OpenCV
Tools	Pandas, Numpy, Matplotlib, Matlab, Jupyter notebook, Flask, Conda
Others	Git, Github, Latex, Jira, Linux, Arduino, Raspberry pi

## ACHIEVEMENTS AND AWARDS

### Kathmandu University Merit-based scholarship

2019

- Awarded for securing the highest GPA in the Computer Engineering cohort in the 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 8<sup>th</sup> semesters respectively. The scholarship was worth \$440 each semester.

### Fusemachines Artificial Intelligence Scholarship Program

Nov 2018

- One of the 100 recipients of the Fuse.ai Artificial Intelligence Scholarship Online Course selected among thousands of candidates nationwide.

### American Society of Nepalese Engineers Merit Award

May 2016

- This merit worth \$200 is rewarded to the entrance toppers of universities, seeking admission for undergraduate degrees.

### 46<sup>th</sup> International Physics Olympiad (IPhO) Contestant

Jun 2015 India

- IPhO is one of the largest olympiads for high school Physics enthusiasts with 100 participating countries and 5 contestants from each nation.

## PROJECTS

### Nepali Intelligent Character Recognition System

- A framework built using CRNN to predict the handwritten texts in both English and Nepali language in each field of a form.

### Nepali Plagiarism Detection (NLP)

- An application that detects plagiarised Devanagari text files using a self-built rule-based stemming algorithm and Cosine similarity.

### Guitar chord recognition app

- An application that predicts the chords when the Mel spectrograms of guitar sound are fed into a CNN.

### Sarangi: Nepali lyrics emotions extraction (NLP)

- A framework that categorizes songs written in the Devanagari script into four emotions using Naive Bayes and SVM.

### AutoCar

- A self-driving car that can detect lanes, stop sign, traffic light and avoid a collision, built using Canny edge detection, Hough transform, Haar cascade classifier, and Arduino programming.

### AI Plays GTA 5: Simulating self-driving vehicles

- A bike-riding agent in a virtual environment (GTA5), built using CNN, used for simulating self-driving vehicles.

### MathMate – advanced mathematical calculator

- An android app that solves different types of mathematical equations, numerical computations, and calculus problems showing involved steps.

## CLUB INVOLVEMENT

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### ANDROID COMMUNITY COORDINATOR

#### Kathmandu University

📅 Jun 2018 – Jun 2019      📍 Kavre, Nepal

- Conducted several workshops and training programs on OOP, JAVA, Android
  - Built an android app for the computer club
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### EXECUTIVE BOARD MEMBER

#### Kathmandu University Computer Club

📅 Jun 2017 – Jun 2018      📍 Kavre, Nepal

- An active student-run club of Department of Computer Science and Engineering
  - Conducted regular monthly and weekly workshop and also organized various annual events like Software Freedom Day
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## MANAGEMENT SKILLS

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### Entrepreneurds Tales' v2.0 Organizer

#### Kathmandu University

📅 Jul 28, 2019      📍 Kavre, Nepal

- Organizing team member of a talk event based on the theme "Leadership and Technology in Entrepreneurship" where entrepreneurs shared their experiences and journey to success
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### IT MEET v 8.0 Organizer

#### Kathmandu University

📅 Dec 28-29 2018      📍 Kavre, Nepal

- Organizing team member of one of the premier annual IT event of Nepal, IT Meet

## COURSES COMPLETED

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Computer Vision Nanodegree – Udacity

Deep Learning Nanodegree - Udacity

Natural Language Processing Nanodegree - Udacity

Faster Python Code - LinkedIn Learning

Python Design Patterns - LinkedIn Learning

Full Stack Web Development with Flask - LinkedIn Learning

Pandas foundations - Datacamp

Software Engineering for Data Scientists in Python - Datacamp

Multivariable calculus - Khan Academy

Statistics and Probability - Khan Academy

Linear Algebra by Gilbert Strang - MIT Lecture Series

Conda Essentials - Datacamp

## EXTRA ACTIVITIES

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Hackathon participant, IT Meet 2019

Coding competition winner, IT Meet 2019

Hardware competition participant, IT Meet 2018

Software competition participant, IT Meet 2018

Project demonstration participant, IT Meet 2018

Yomari Code camp participant, IT Meet 2017

KUCC Football tournament participant

Smart City Workshop 2017 Volunteer at IT Park

Project demonstration volunteer, IT Meet 2017