

# UTSAV DARLAMI

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Website — Github — LinkedIn

## EDUCATION

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### Master of Science in Computer Science

University of Alabama in Huntsville, Huntsville, Alabama

August 2025 - present

### Bachelor of Science in Computer Science

Kathmandu University, Dhulikhel, Nepal

August 2017 - March 2022

## EXPERIENCE

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### Machine Learning Engineer

Docsumo

September 2021 - April 2025

Kathmandu, Nepal

- Led a table extraction project using LLM models, identified regions of interest, and converted tabular data from text to a structured format. Benchmarked models including GPT-3.5, GPT-4o, Mixtral-8x7B v0.1, Llama 3.1 8B, and Llama 3.1 70B, achieving **75%** accuracy with GPT-4o.
- Co-led the development of a comprehensive package for LLMs focused on information extraction, enabling quick experimentation and facilitating efficient production deployment of LLM-based extractions.
- Developed a table structure that streamlined table data featurization for model training, resulting in a **60%** reduction in featurization time.
- Enhanced the W-2 form extraction pipeline, boosting accuracy from **86.8%** to **90.2%** by introducing a new processing layer to handle previously overlooked scenarios.
- Deployed an API for text classification training and inference, leveraging rule-based systems and machine learning models (fasttext, spacy). This API is now utilized by 4 other APIs.

### Python Community Coordinator

Kathmandu University Computer Club

August 2019 - August 2020

Dhulikhel, Nepal

- Led Python workshops for first and second year students of Kathmandu University through Kathmandu University Computer Club(KUCC).
- Delivered comprehensive lessons on essential Python programming concepts, Object-Oriented Programming(OOP), imparting fundamental knowledge and showcasing practical applications of data structures.

## PROJECTS

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### Evolutionpy

*python, numpy, meta-heuristic algorithm*

*Github*

- Designed and built an evolution-based optimizer using Python, as a personal challenge to improve my expertise in the language and learn more about software design patterns.
- Developed the project with the goal of learning how to build a Python package and to gain deep understanding of evolutionary algorithms and their applications to optimization problems.
- Applied best practices in software development, including modular code design, testing, and documentation, to create a reliable and developer-friendly package

### Sandstone Microscopic Image Segmentation

*python, scikit-learn, semantic-segmentation*

*Github*

- Uses image filters and random forest model for performing semantic image segmentation to locate the Quartz, Pore, Clay and Heavy materials in the sandstone microscopic image.
- Applied image processing filters like Gaussian, Sobel, Entropy and Gabor filters to prepare the data features for model training.

- Explored the evaluation metrics like dice-coefficient and intersection over union for semantic image segmentation. The model had average dice-coefficient(F-1 Score) of **95%**.

### **BreakfastScoop**

*Github*

*python, webscraping*

- Scrapes news articles from Nepali news sites using BeautifulSoup
- Uses Naive Bayes classifier to classify news into 10 categories with an f1-score of **81%**

### **Nepali License Plate Detection and Recognition**

*Github*

*python, YOLO, Neural Network*

- Uses YOLOv2 state of art object detection model to detect license plates from a video.
- Applied Otsu threshold technique to segment and extract license plate characters.
- Developed Nepali character recognition model using Keras with an accuracy of **96%**.

## TALKS AND PRESENTATION

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**Slide Presentation** on “Artificial Neural Network-Genetic Algorithm for Optimization of Multivariate Function: An Application to Lactic Acid Production” at the National Conference on Mathematics and Its Applications (NCMA 2022)

*Illam, Nepal*

*June 2022*

## SKILLS

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### **Programming Languages**

Python(+3 years), C/C++, Bash, Javascript

### **Database and Tools**

SQL, MongoDB, Docker, Git, Postman, Linux

### **Data science and ML Frameworks**

scikit-learn, OpenCV, networkx, pandas, matplotlib, numpy, spacy, fasttext

### **Deep Learning Frameworks**

Pytorch, transformers

### **Languages**

English, Nepali and Hindi