Astik Dahal

Email: astik.dahal058@gmail.com | Web: astikdahal.com.np | GitHub: github.com/astik-dahal

EDUCATION

Bhaktapur Multiple Campus, Tribhuvan University, Nepal Jan. 2018 - Jun. 2022

B.Sc. in Computer Science and Information Technology; ***Percentage:*** *74.55 %*

- **Relevant Coursework:** Artificial Intelligence, Computer Graphics, Statistics, Mathematics, Linear Algebra, System Analysis and Design, Web Technology, Object-Oriented Programming, Database Management System.

Reliance International Academy, Nepal Aug. 2016 - Sep. 2018

High School (+2) in Science; ***CGPA:*** *3.29*

RESEARCH INTERESTS

Artificial Intelligence · Swarm Computing · Visual Computing · Computer Graphics · Human-Centered Computing · Explainable AI · Augmented Reality · Image Processing

SKILLS

- **Programming Languages:** Python, JavaScript, C, C#, C++, Java, HTML/CSS, MATLAB
- **Libraries:** OpenCV, TensorFlow, Scikit-Learn, Keras, Numpy, Pandas
- **Tools & Technologies:** Git, Docker, Jupyter Notebooks, Blender, Adobe Creative Suite
- **Frameworks:** VueJS, Flask, Django
- **Databases:** MongoDB, MySQL, PostgreSQL
- **Developer Tools:** VSCode, PyCharm

INTERNSHIP / WORK EXPERIENCE

Lechia Recruitment & Consulting Nov. 2024 – Ongoing

Machine Learning / AI Intern

- Analyzing candidate data and building ML models with preprocessing pipelines to streamline screening, verify skills, and generate actionable recruitment insights.

Morgenland Teppiche Dec. 2022 – Mar. 2024

Software / Product Designer

- Designed and developed e-commerce and SaaS dashboards with a reusable UI component system, collaborating with developers and managers to optimize interface and user-focused features.

Hyteno Tech Aug. 2023 – Nov. 2023

Software Engineering Internship

- Developed a user-friendly travel booking system and an admin-focused content management system, enhancing usability, interaction, and management of queries and website updates.

Lancemeup Jul. 2020 – Mar. 2022

Frontend Developer

- Designed and developed responsive, full-stack web applications (e.g., Maghao, Lancemeup); led UI/UX design and established reusable design systems.
- Mentored juniors through boot camps and team initiatives.

PROJECTS AND RESEARCH

Automatic Number Plate Recognition using OpenCV and KNN Algorithm | *Bachelor's Thesis*

Link: Github

- Led a team of 3 to develop an OCR system using KNN to automate vehicle owner identification from number

plate images, enhancing the efficiency and accuracy compared to manual methods.
- Implemented a full-stack web application with Python, OpenCV, Flask, SQLAlchemy, and front-end technology.

Comparative Study of Emerging Machine Learning Models for Nepali (Devanagari) Handwritten Character Recognition | *Personal Research Project*
Link: Google Colab
- Conducted a comparative study of CNN, SVM, ViT, and Capsule Networks for Devanagari script recognition, achieving 98.6% accuracy with CNN.
- Implemented and evaluated deep learning models using TensorFlow/Keras and scikit-learn, showcasing proficiency in image classification and performance analysis.

Depth-Aware Background Blur using MiDaS | *Personal Research Project*
Link: Website
- Developed a portrait effect using MiDaS depth estimation and background blurring with OpenCV.
- Automated foreground-background separation from single images using Python and deep learning.

Augmented Reality-based Car Game | *Academic Project*
Link: Report Link
- Engineered an immersive AR car game in Unity using C# and ARFoundation, implementing advanced object tracking, placement, and responsive controller-based gameplay.

Web Content Accessibility Guidelines (WCAG) Online Tool| *Personal Research Project*
Link: Website
- Developed an interactive Color Contrast Checker that allows users to select colors and evaluate accessibility compliance through real-time contrast ratio calculations.

Intercollege Social Media Platform (Nepsocial)| *Personal Research Project*
Link: Github
- Developed a student networking platform using Flask backend and SQLite database.

TEACHING EXPERIENCES

CG Institute of Management | *Kathmandu, Nepal* Aug. 2023
- Led a boot camp for interface design and web development (JavaScript, HTML, and CSS) to 50+ students.

RPA Nepal | *Online* Oct. 2022
- Led a boot camp for 60+ students covering UI basics, typography, design principles, development tools, and career mentoring.

Mega College | *Kathmandu, Nepal* Apr. 2021
- Taught frontend basics (HTML, CSS, JavaScript) and design principles through project-based, iterative learning.

HACKATHONS

QuantumHack May. 2021
- Led a team of 4 developers to design the frontend and database for a career guide web app, helping students identify suitable career paths.

Asian College Hackathon Sep. 2020
- Created an app that allowed users to track information regarding new mobile launches from manufacturers.

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Reliance International Academy, Nepal 2016 - 2018
High School (+2) in Science; **CGPA:** 3.29

Saraswati Academy English School, Nepal 2004 - 2016
School Leaving Certificate Examination (Grade 10); **GPA:** 3.70

RESEARCH INTERESTS

Artificial Intelligence · Swarm Computing · Visual Computing · Computer Graphics · Human-Centered Computing · Explainable AI · Augmented Reality · Image Processing

SKILLS

- **Programming Languages:** Python, JavaScript, C, C#, C++, Java, HTML/CSS, MATLAB
- **Libraries:** OpenCV, TensorFlow, Scikit-Learn, Keras, Numpy, Pandas
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- **Frameworks:** VueJS, Flask, Django
- **Databases:** MongoDB, MySQL, PostgreSQL
- **Developer Tools:** VSCode, PyCharm

INTERNSHIP / WORK EXPERIENCE

Morgenland Teppiche Dec. 2022 – Ongoing
Software Product / Web Designer

- Designed and developed e-commerce and SaaS dashboards with a reusable UI component system, collaborating with developers and managers to optimize interface and user-focused features.

Lechia Recruitment & Consulting Nov. 2024 – May. 2025
Machine Learning / AI Intern

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Hyteno Tech Aug. 2023 – Nov. 2023
Software Engineering Internship

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Lancemeup Jul. 2020 – Mar. 2022
Frontend Developer

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- Mentored juniors through boot camps and team initiatives.

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- **Relevant Coursework:** Artificial Intelligence, Computer Graphics, Statistics I & II, Mathematics, Linear Algebra, System Analysis and Design, Web Technology, Object-Oriented Programming, Database Management System.
- **Undergrad Thesis Project:**

  Automatic Number Plate Recognition using OpenCV and KNN Algorithm | *Python, OpenCV, JS* Github
  - Built an ANPR system using Python and OpenCV with KNN for license plate detection and owner identification.
  - Enhanced accuracy with advanced pre-processing techniques like noise reduction and edge detection.

High School (+2) in Science **2016 - 2018**

Reliance International Academy, Nepal | ***CGPA:*** *3.29*

RESEARCH INTERESTS

Explainable AI, Swarm Intelligence, Computer Vision & Graphics, Machine Learning, Human-Centered Computing

OTHER RESEARCH EXPERIENCE

Comparative Study of SVM, CNN, and Emerging Architectures (ViTs, Capsule Networks) for Devanagari Handwritten Character Recognition

Role: Lead Researcher | Ongoing Google Colab

- **Overview:** Designed and executed a rigorous comparative analysis of four key models—CNN, SVM, Vision Transformer (ViT), and Capsule Networks (CapsNet) on Devanagari script datasets.
- **Key Achievements**:
  - CNN consistently achieved ~98.5% accuracy with efficient inference time, outperforming SVM's ~95% accuracy on larger data. CapsNet exhibited ~97% accuracy, benefiting from enhanced spatial relationship encoding. ViT showed moderate results (~85%) under limited data conditions, highlighting the potential for improvement with larger collection and fine-tuning.

SKILLS

- **Programming Languages:** Python, JavaScript, C, C#, C++, Java, HTML/CSS
- **Libraries:** TensorFlow, Scikit-Learn, OpenCV, Keras, Numpy, Pandas
- **Tools & Technologies:** Git, Docker, Jupyter Notebooks, TensorFlow, PyTorch, OpenCV
- **Data:** Data Cleaning, Data Visualization
- **Research:** Scientific Writing, Data Analysis, Literature Review, Statistical Analysis
- **Frameworks:** VueJS, Flask, Django
- **Databases:** MongoDB, MySQL, Postgresql
- **Developer Tools:** VSCode, PyCharm

INTERNSHIP / WORK EXPERIENCE

Machine Learning / AI Intern **Nov. 2024 – Ongoing**

Lechia Recruitment & Consulting

- Analyze large datasets of candidate profiles to identify patterns and insights that support recruiting skilled professionals.
- Implement machine learning models to streamline candidate screening and improve efficiency in skill verification.
- Collaborate with other team members to develop data preprocessing pipelines to clean and organize recruitment and candidate data for use in analytics and model training and create automated reports.

Software / Product Designer **Dec. 2022 – Mar. 2024**

Morgenland Teppiche

- Designed and implemented a scalable B2B SaaS dashboard, integrating product design principles with front-end development to create streamlined partner systems.
- Built a robust design system and a library of reusable UI components to ensure consistency and development efficiency across digital platforms. Collaborated closely with developers to prototype, test, and refine user-friendly features.

Software Engineering Internship **Aug. 2023 – Nov. 2023**

Hyteno Tech

- Developed a user-friendly travel booking system and an admin-focused content management system, enhancing usability, interaction, and management of queries and website updates.

Frontend Developer **Jul. 2020 – Mar. 2022**

Lancemeup

- Designed and developed responsive websites with backend functionality, created user-friendly interfaces for platforms like Maghao and Lancemeup, and led UI/UX efforts for various in-house and client projects.
- Established design systems for reusability, mentoring juniors through boot camps and team

development initiatives.

PROJECTS

Augmented Reality-based Car Game | *C#, Unity*
- Built an AR-based car game using Unity
- Used ARFoundation libraries to track and place objects, and controllers for game controls.

Web Content Accessibility Guidelines (WCAG) Online Tool| *JS, CSS, HTML* Website
- Developed an interactive Color Contrast Checker that allows users to select colors and evaluate accessibility compliance through real-time contrast ratio calculations.

Intercollege Social Media Platform (Nepsocial)| *Python, JS, CSS, HTML* Github
- Developed a platform to connect students within a classroom
- Utilized Flask for the backend, and SQLite as a database

TEACHING EXPERIENCES

CG Institute of Management
Bootcamp - Onsite - Kathmandu, Nepal
- Developed and delivered course modules on interface design and front-end development.
- Introduced over 50 students to the basics of web development.

Mega College
Bootcamp - Onsite - Kathmandu, Nepal
- Taught the basics of frontend technologies including HTML, CSS, Javascript, and design principles.
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Bootcamp - Online
- Completed a boot camp with over 60 students, teaching user interface basics, typography, and design principles.
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Onsite - Kathmandu, Nepal
- Created an app that allowed users to track information regarding new mobile launches from manufacturers.

QuantumHack
Online

- Led a team of 4 developers, and handled the frontend and database design.
- Developed a career guide web application that assists students in discovering suitable career paths based on their current education level.

REFERENCES

Sushant Poudel
Head of Department, B.Sc. CSIT - Bhaktapur Multiple Campus
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Surya Bam
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Binod Acharya
Board President - Lechia Recruitment & Consulting
Binod@lechiarecruitment.pl

Adish Kattel
Project Manager - Morgenland Teppiche
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