PERSONAL INFORMATION

Dhiraj Neupane

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Gender Male | Date of birth 30/04/1995 | Nationality Nepalese

PERSONAL STATEMENT

As a highly motivated and proactive Deep Learning researcher, I bring a strong IT, finance, and academic research background to drive innovation and growth. My expertise in machine learning, computer vision, image processing, big data analysis, and intelligent fault detection demonstrates my commitment to pushing the field's boundaries. I am eager to leverage my skills and knowledge to pursue challenging and rewarding career opportunities where I can make significant contributions and establish a solid foundation for my professional growth.

WORK EXPERIENCE

05 October 2022 – Present

PhD Candidate

School of IT, Deakin University, Waurn Ponds Campus (Australia)

Key Roles
- Research on Machinery Fault Detection using ML/DL approaches

Accomplishments
- Participated in HUMS Data Challenge organized by DST Group, Australia

01 September 2021 – 31 August 2022

Researcher

IPCamp, Jinju-Si (South Korea)

Key Roles
- Object detection algorithm for Disability Badge Holders' Parking Management System
- Development of face recognition and safety products detection system
- Working with Computer Vision, Object Detection, Deep Learning, IP Camera, LED Modules, LED Matrix Board, Arduino
- Troubleshooting and solving the technical problems

Accomplishments
- DL-based Disability Parking Management System at Disability Welfare Center, Jinju-si, South Korea **[Link]**
- DL-based Disability Parking Management System in Gimpo International Airport, Seoul, South Korea **[Link]**
- DL-based Electric Car Parking Management System
- Mentored university students for AI big data project, who then secured the second position in the competition

04 March 2019 – 21 February 2021

Graduate Research Assistant

Changwon National University, Changwon-Si (South Korea)

Key Roles
- Carry out ML and DL-related project experiments
- Prepare technical documentation and write research papers
- Mentor undergraduate students' project activities
- Manage lab resource

Accomplishments
- DL research and projects *(listed in* **Projects** *section [MS Projects])*
- Published 4 SCIE journal articles and 1 conference paper *(listed in* **Publications** *Section)*

22 Apr 2018 – 12 Feb 2019

Operation Assistant

Nepal Electronic Payment Systems Limited, Kathmandu (Nepal)

Key Roles

- ATM and PoS testing and monitoring
- Testing all the possible issues before the ATM or PoS service was established
- Working in Putty and SSH
- Transactions monitoring, troubleshooting technical problems and solving them

17 October 2016 – 13 April 2018

Secondary-Level School Teacher

Shree Marigold Academy Vidhya Mandir, Kailali (Nepal)

Key Roles

- Full-time teacher of secondary-level Mathematics, Science and Computer Science subjects

15 August 2016 – 04 September 2016

Internship

Subisu Cablenet Pvt. Ltd., Baluwatar, Kathmandu (Nepal)

- Learned about GPON Architecture and Cable net Architecture

EDUCATION AND TRAINING

Oct 2022 – Present

PhD in Information Technology

Deakin University, Waurn Ponds, VIC, Australia

- **Research in Machinery fault Detection using machine learning approaches**
- **Deakin University postgraduate research scholarship**

Mar 2019 – Feb 2021

MS in Information and Communication Engineering

Changwon National University, Changwon-Si (South Korea)

- **Full Scholarship and Graduate Research Assistantship**
- **Higher Distinction [CGPA: 4.44/4.50]**

Aug 2012 – Aug 2016

BE in Electrical and Electronics Engineering

Kathmandu University, Dhulikhel, Kavere (Nepal)

July 2010 – June 2012

Higher Secondary Education (10+2)

St. Xavier's College, Maitighar, Kathmandu (Nepal)

2009/10

School Leaving Certificate (SLC)

Mount Saipal International Academy, Tikapur, Kailali (Nepal)

- Batch Topper

GRANTS AND ACHIEVEMENTS

2022- 2025

Deakin University Postgraduate Research Scholarship (DUPRS)

School of IT, Deakin University, Waurn Ponds, VIC, Australia

2019-2021

Full Scholarship student

Department of Information and Communication Engineering, Changwon National University, South Korea

2021

Higher Distinction in MS degree

2019

Sejong University Industry-Academic Cooperation Grant

Sejong University, South Korea

2010

School Topper in National-Level SLC (School Leaving Certificate) Exam

WORKSHOPS AND CONFERENCES

27 – 28 February 2023 — Australian International Aerospace Congress (AIAC20)
Melbourne, Australia

14 – 15 December 2022 — Centre for Cyber Security Research and Innovation's (CSRI) Annual Conference
Melbourne, Australia

21 – 23 October 2020 — ICTC2020- International Conference on ICT Convergence
Jeju, South Korea

LANGUAGE PROFICIENCY TEST

19 May 2022 — Pearson Test of English (PTE)
Overall: 68 Listening: 71 Reading: 63 Speaking: 60 Writing: 75

PERSONAL SKILLS

Mother Tongue(s): **Nepali** [Native]

Foreign Language(s): **English** [Proficient User] **Hindi** [Proficient User] **Korean** [Basic User]

Computer Skills:

- **Programming:** Python, MATLAB, C#
- **Application Software:** MS Office, LaTeX, Arduino, Simulink, MULTISIM, Putty
- **Operating System**: Windows, Linux
- **IDE:** Jupyter notebook, Spyder, PyCharm, Visual Studio
- **Python Libraries:** Keras, Tensorflow, OpenCV, Pandas, NumPy, Scikit-learn, Matplotlib
- **Familiar With:** C/C++, Java, Android Studio, MacOS, MySQL, PyTorch

Additional Skills:

- Strong interpersonal skills and ability to deal effectively in a team environment
- Skill in organizing resources and establishing priorities
- A good Analyst
- Developed the ability to produce reports and presentations of a professional standard
- Punctual, confident, attentive to details, organized, cooperative, patient, analytical, logical, and a problem-solver

ORGANIZATIONAL AND MANAGERIAL SKILLS

2015 – 2016 President of Society of Electrical and Electronics Engineers (SEEE), Kathmandu University

2014 – 2015 Joint- Secretary of Amnesty International Kathmandu University Youth Network (AIKUYN)

2013 – 2014 Executive Member of Amnesty International Kathmandu University Youth Network (AIKUYN)

ADDITIONAL INFORMATION

Projects

PhD Projects:

- Machinery Fault Detection using ML/DL Approaches [2023 – present]
- HUMS Data Challenge prepared by Defence Science and Technology Group [2022 – 2023]

MS Projects:

- Machinery Fault Detection using Switchable Normalization-based CNN (SN-CNN) [2020 - 21]

- Machinery Fault Detection using Deep Learning (1-D CNN and 2-D Illustration of Time-Sequence) [2020]
- Sonar Target Detection using CNN [2019]
- Face recognition using Multi-Task CNN [2019]

Undergraduate Projects:

- Performance Analysis of Multi-Mode Fiber (MMF) [2016]
- Microcontroller-based Token Number with Announcement and Wireless Display [2015]
- Design and Fabrication of Digital Tachometer [2014]
- Design and Fabrication of Clap Controlled Switch [2013]

Publications

Journal and Conference Papers:

- "Bearing Fault Diagnosis and Detection using Case Western Reserve University Dataset with Deep Learning Approaches: A Review" [Published in IEEE Access; DOI: 10.1109/ACCESS.2020.2990528]
- A Review on Deep Learning-Based Approaches for Automatic Sonar Target Recognition" [Published in Electronics; DOI: 10.3390/electronics9111972]
- "Bearing Fault Detection Using Scalogram and Switchable Normalization-Based CNN" [Published in IEEE Access; DOI: 10.1109/ACCESS.2021.3089698]
- "CNN-Based Fault Detection for Smart Manufacturing" [published in Applied Sciences DOI: doi.org/10.3390/app112411732]
- "Deep Learning-Based Bearing Fault Detection Using 2-D Illustration of Time Sequence", published in ICTC2020- International Conference on ICT Convergence 2020 DOI: 10.1109/ICTC49870.2020.9289232]
- "SHINE: Deep Learning-Based Accessible Parking Management System", submitted in Expert Systems with Applications after addressing major and minor revisions [arXiv DOI: arXiv:2302.00837v2]

Certificates

- Course completion certificate for completing the course "Introduction to Computer Vision and Image Processing" by Coursera on 03 March 2022.
- Course completion certificate for completing the course "Research ethics for graduate students (Science and Engineering)" taken by the Korea Institute of Human Resources Development in Science & Technology on 12 April 2020.

Reviewer and PC Member

- Reviewer of the article for the **Journal of Big Data** [September 2023]
- Program Committee member for the **AICCSA2023 (20th ACS/IEEE International Conference on Computer Systems and Applications)** [April 2023]
- Program Committee member for the **AICCSA 2022 (19th ACS/IEEE International Conference on Computer Systems and Applications)** [August 2022]
- Sub reviewer for the **ICONIP 2022: The 29th International Conference on Neural Information Processing** [August 2022]
- Sub reviewer for the **29th International Conference on Neural Information Processing (ICONIP 2022)** [August 2022]
- Certificate of Reviewing awarded by **IEEE Transactions on Industrial Electronics** in recognition of the review contributed to the journal in 2022.
- Certificate of Reviewing awarded by **Springer Nature** in recognition of the review contributed to the journal in 2022.
- Certificate of Reviewing awarded by **Applied Soft Computing Journal** in recognition of the review contributed to the journal in 2021.
- Sub reviewer for **MSN 2021 (The 17th International Conference on Mobility, Sensing and Networking)** [October 2021]

Licenses

- Probationary (P2) Driver Licence (Car/Automatic) provided by VicRoads in April 2023
- Working with Children Check Certificate, provided by Working with Children Check Victoria in February 2023 (Card No. 2678149A)
- Electrical and Electronics Engineer's License, provided by Nepal Engineering Council in June 2017

(Regd No. 1519 "Electrical and Electronics 'A' Category")

Field of Interest	ML/DL, Machinery Fault Detection, Computer Vision and Object detection, Sonar target detection
Personal Interest	Trekking and Traveling, Research, Deep Learning, Stock Market, Literature, Music

REFERENCES

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