

## PERSONAL INFORMATION



## Dhiraj Neupane

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<https://scholar.google.com/citations?user=KtSkA68AAAAJ&hl=en>

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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	<b>Australian International Aerospace Congress (AIAC20)</b> Melbourne, Australia
14 – 15 December 2022	<b>Centre for Cyber Security Research and Innovation's (CSRI) Annual Conference</b> Melbourne, Australia
21 – 23 October 2020	<b>ICTC2020- International Conference on ICT Convergence</b> Jeju, South Korea

**LANGUAGE PROFICIENCY TEST**

19 May 2022	<b>Pearson Test of English (PTE)</b> Overall: 68    Listening: 71    Reading: 63    Speaking: 60    Writing: 75
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**PERSONAL SKILLS**

Mother Tongue(s)	<b>Nepali</b> [Native]		
Foreign Language(s)	<b>English</b> [Proficient User]	<b>Hindi</b> [Proficient User]	<b>Korean</b> [Basic User]
Computer Skills	<ul style="list-style-type: none"> <li>➤ <b>Programming:</b> Python, MATLAB, C#</li> <li>➤ <b>Application Software:</b> MS Office, LaTeX, Arduino, Simulink, MULTISIM, Putty</li> <li>➤ <b>Operating System:</b> Windows, Linux</li> <li>➤ <b>IDE:</b> Jupyter notebook, Spyder, PyCharm, Visual Studio</li> <li>➤ <b>Python Libraries:</b> Keras, Tensorflow, OpenCV, Pandas, NumPy, Scikit-learn, Matplotlib</li> <li>➤ <b>Familiar With:</b> C/C++, Java, Android Studio, MacOS, MySQL, PyTorch</li> </ul>		
Additional Skills	<ul style="list-style-type: none"> <li>➤ Strong interpersonal skills and ability to deal effectively in a team environment</li> <li>➤ Skill in organizing resources and establishing priorities</li> <li>➤ A good Analyst</li> <li>➤ Developed the ability to produce reports and presentations of a professional standard</li> <li>➤ Punctual, confident, attentive to details, organized, cooperative, patient, analytical, logical, and a problem-solver</li> </ul>		

**ORGANIZATIONAL AND MANAGERIAL SKILLS**

2023 – Present	Victorian Multicultural Commission's Regional Advisory Council (RAC) member of Barwon South-West
2023 – Present	Executive member of Geelong Nepalese Association, Geelong, Victoria, Australia
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	<b>PhD Projects:</b> <ul style="list-style-type: none"> <li>▪ Machinery Fault Detection using ML/DL Approaches [2023 – present]</li> <li>▪ HUMS Data Challenge prepared by Defence Science and Technology Group [2022 – 2023]</li> </ul>
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**MS Projects:**

- Machinery Fault Detection using Switchable Normalization-based CNN (SN-CNN) [2020 - 21]
- Machinery Fault Detection using DL (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](https://doi.org/10.1109/ACCESS.2020.2990528) ]
- A Review on Deep Learning-Based Approaches for Automatic Sonar Target Recognition" [**Published** in Electronics;  
DOI: [10.3390/electronics9111972](https://doi.org/10.3390/electronics9111972)]
- "Bearing Fault Detection Using Scalogram and Switchable Normalization-Based CNN" [**Published** in IEEE Access;  
DOI: [10.1109/ACCESS.2021.3089698](https://doi.org/10.1109/ACCESS.2021.3089698)]
- "CNN-Based Fault Detection for Smart Manufacturing" [published in Applied Sciences  
DOI: [doi.org/10.3390/app112411732](https://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](https://doi.org/10.1109/ICTC49870.2020.9289232)]
- "Shine: Deep Learning-Based Accessible Parking Management System"[**published** in Expert Systems with Applications  
DOI: [doi.org/10.1016/j.eswa.2023.122205](https://doi.org/10.1016/j.eswa.2023.122205)]
- "A Comparative Study of Semi-Supervised Anomaly Detection Methods for Machine Fault Detection" **submitted** in e-PHM2024

## Reviewer and PC Member

- Reviewer of an article for **Signal, Image and Video Processing** [March 2024]
- Reviewer of an article for **Scientific Reports** [February 2024]
- Reviewer of an article for **Symmetry** [February 2024]
- Reviewer of an article for **Animals** [January 2024]
- Reviewer of an article for the **Sensors** [December 2023]
- Reviewer of an article for the **Journal of Marine Science and Engineering** [October 2023]
- Reviewer of an 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

## Personal Interest

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

## REFERENCES

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