

Inaugural Lecture

Dr. Bal Krishna Bal
Professor of Computer Engineering
Department of Computer Science & Engineering
School of Engineering
Kathmandu University

October 2, 2024

Academic Qualifications:

- BE & ME Informatics and Computer Engineering, Volgograd State Technical University, Russia(2002, 2004)
- PhD in Computer Engineering, Kathmandu University (2015)

Career Path and History:

- Permanent Assistant Professor, DoCSE, KU, 2009.
- Promoted to Associate Professor, DoCSE, KU,2018.
- Promoted to Professor, DoCSE, KU, 2024.
- Involvement in Language Technologies Research and Development since 2005.

Research Interests

Software Localization, Natural Language Processing, Language Technologies, Social Computing, Trust Parameters in E-Government Systems, Cyber Security



Vision

- **Pioneering Technological Advancements**
 - Lead R&D in key areas viz., AI, ML, Cybersecurity, and Emerging Technologies.
 - Establish Kathmandu University as a hub for innovation in the region.
- **Bridging Academia and Industry**
 - Foster stronger ties between the University and the Tech industry.
 - Ensure that the research and education are relevant to real-world problems.
- **Global Competence, Local Relevance**
 - Equip students with the skills needed to succeed on a global scale.
 - Address the unique technological challenges and opportunities in Nepal.



Goals

- **Research Excellence**
 - Establish and lead cutting-edge research labs focusing on AI, Big Data, and Emerging Technologies.
 - Increase the University's research output through collaboration with international universities and publication in high-impact journals.
 - Secure funding through grants and partnerships with industry and governmental bodies.
- **Curriculum Innovation**
 - Update the curriculum to reflect the rapidly evolving field of Computer Engineering, integrating modern technologies like Cloud Computing, IoT, and Quantum Computing.
 - Develop interdisciplinary programs that combine Computer Engineering with fields like Biology, Economics, and the Social Sciences.
- **Student Development**
 - Encourage hands-on, project-based learning to ensure that the students are equipped with practical skills alongside theoretical knowledge.
 - Mentor students in research and entrepreneurship, fostering an environment where they can innovate and create startups.
 - Develop programs that prepare students for global competitiveness, including coding competitions, internships, and research opportunities abroad.
- **Collaborative Culture**
 - Strengthen collaboration with other Departments to promote interdisciplinary research.
 - Work with local and international industries, tech companies, and research institutions to drive collaborative projects that benefit students, faculty, and the University as a whole.
- **Infrastructure and Resources**
 - Strive for better lab facilities, high-performance computing resources, and access to cutting-edge software and hardware tools.
 - Promote the establishment of incubators and innovation hubs within the University to support student-led ventures and research.



Research & Innovation

- How can technologies serve the underprivileged and the marginalized Communities?
- How can the academic research outputs benefit the society at large?
- Language Technologies Research and Development at the Information and Language Processing Research Lab (ILPRL), Kathmandu University
 - Collaboration with the Nepal Association of Blind (NAB)
 - Optical Character Recognition System (OCR) for Nepali
 - Text-to-Speech (TTS) for Nepali
 - Collaboration with Google and the Nepali Diaspora
 - Trilingual Machine Translation (MT) System (English-Nepali-Tamang Pairs)
 - Other ongoing research at the Lab
 - Automatic Speech Recognition (ASR) for Nepali
 - Cross-Lingual Information Retrieval (CLIR) for English-Nepali
 - MT Systems for Nepal's Languages
 - Sentiment Analysis and Detection of Abusive/Profane Content

Teaching Philosophy

- **Emphasize hands-on learning and make the students make their hands dirty as they learn and implement the concepts.**
- **Foster critical thinking, problem-solving, and creativity through real-world projects.**

What is it becoming a Professor?

- A lifetime dream accomplishment.
- A moment to thank the Kathmandu University family - students, faculties, staff.
- A moment of gratitude to my parents and family members for their unwavering support
- The accomplishment comes with:
 - Added up responsibilities on the part of the University and the society at large.
 - Will carry out the bestowed responsibilities to the best of my ability focusing on:
 - Increased collaboration with internal and external agencies.
 - Promote the research culture within the University.
 - Play a pivotal role in uplifting the global ranking of the University in all aspects.

Thank You!!