

Professional Summary

- Result-oriented and forward-thinking individual with a proven record of achievements in research, analysis, and development, possessing excellent problem-solving and decision-making skills.
- Well-developed communication, organizational, and leadership skills, with a successful track record of collaboration and teamwork in various aspects of basic and applied research and development.
- Reliable, committed, and detail-oriented lifelong learner with a high degree of resilience, integrability, and adaptability in multicultural and multilingual environments.
- Highly motivated individual with extensive international exposure across 5 continents in a range of sectors, including industry, academia, and government.

Relevant Skills

• Research and Development

- Strong research expertise in program analysis and verification, and constraint solving, as demonstrated by 20+ peer-reviewed scientific publications (citations: 220, h-index: 10, i10-index: 10) and 10+ research tools, gained prior to, during and after completing my PhD.
- Involved in 5+ large-scale international projects funded by NASA, the EU, Australian, Spanish, and Italian government, showcasing experience in research project management and collaboration with diverse teams.
- Recognized as an expert in the field, having served as a steering committee member of a conference series, PC chair of 2+ conferences, PC member of 12+ conferences, reviewer of 5+ leading journals, and an assessor of the ARC, while also being an honorary researcher at The University of Melbourne.
- ACS accessed Software engineer, demonstrating the ability to apply software engineering practices in real-world applications.
- Proficient in various types of programming languages (Procedural, Logical, and Functional), software engineering, cyber security, and data science, as evidenced by several contributed research (<https://github.com/bishoksan>) and commercial (e-Sewa: <https://esewa.com.np>) tools.
 - * Programming Skill: Java, JEE, JSP, JSF, JavaDoc, Javascript, C, C++, Python, Pascal, Prolog, OCaml, SQL etc.
 - * IDE: NetBeans, Eclipse, VisualStudio
 - * Database: MySQL, Oracle, IBM DB2
 - * Source Control: SVN, Git
 - * Data analysis: Python, SPSS
 - * IBM tools: IIB, MQ

- * XML related technologies: XSLT, WSDL, XSD, XPath

Communication, networking and leadership skill

- Great communication skills, as demonstrated by 30+ scientific presentations, teaching and supervision experience in computer science, showcasing the ability to effectively communicate complex information in various settings.
- Involved in 5+ international projects, demonstrating the ability to work collaboratively with teams from diverse backgrounds and cultures.
- Strong networking skills, evidenced by 5+ international collaborations across the US, EU, and AU, 24+ co-authors and tool developers, and involvement in several event organizations, showcasing the ability to build and maintain relationships with individuals and organizations across different regions.
- Strong leadership skills, as evidenced by effectively chairing conferences, facilitating working groups and meetings, overseeing the editing process of conference volumes, as well as strategically planning, designing, and delivering courses.
- Co-founder of Nepal Development Society, an NGO delivering aid and conducting public health research. Currently serving as executive member.
- Proficient in writing for diverse audiences: academic, industry, and government.
- Skills
 - * Document processing system: L^AT_EX, MS Office
 - * Conference management system: EasyChair, HotCRP

• Project and Resource Management, and Conflict Resolution

- Experienced in large-scale projects across diverse sectors, achieving project milestones in a timely manner, and effectively disseminating project outcomes and tools.
- Proficient in resource management, including planning and prioritizing project requirements, managing budgets and finances, mitigating risks, managing time efficiently, setting up project websites, facilitating communication and collaboration, creating document sharing repositories, providing guidance and support to team members, and developing innovative project ideas.
- Expert in conflict resolution techniques, including active listening, collaboration, compromise, and mediation, with a track record of resolving co-authorship issues, selectively publishing project outcomes, and selecting appropriate tool licenses. Effective conflict management has helped build strong relationships with colleagues and stakeholders, leading to successful project outcomes.
- Skills
 - * ERP System: SAP
 - * Project management: Trello

Work History

- **Department of Home Affairs**
Integration Developer

ACT, Australia
2022-

- Analysis, coding, testing, and implementation of software systems using various programming languages and tools; technical support; research and leadership:

- * Obtained a comprehensive understanding of the Customs Connect Facility applications within the Department and provided technical support to several 100s of customers through effective teamwork.
- * Initiated a successful integration project using the IBM toolchain, demonstrating motivation and excellent teamwork skills.
- * Led a team to enhance NtHorn, a nontermination tool, resulting in a peer-reviewed publication.
- * Appointed as chair of an international conference due to expertise in logic-based program analysis, and secured grants for authors and invited speakers. Also engaged with Springer to publish conference proceedings.
- * Appointed Section representative responsible for facilitating the cybersecurity hardening efforts of the department.

- **IMDEA Software Institute** Madrid, Spain
Research Fellow in Computer Science 2019-2022

- Computational resource analysis and verification, and recurrence equations solving:
 - * Led and collaborated with a team to develop 3 state-of-the-art program analysers, PIHORN, NTHORN, TAGR-SOLVER, resulting in 4 peer-reviewed publications.
 - * Contributed to securing funding worth EUR 200,000+.

- **The University of Melbourne** Melbourne, Australia
Research Fellow in Computer Science 2016-2019

- Analysis and verification of programs manipulating fixed-width arithmetic, preconditions generation, decision procedures:
 - * Demonstrated expertise in constraint solving and up-to-date knowledge of current industry trends, resulting in 6 peer-reviewed publications and the development of 2 state-of-the-art constraint solvers (SOMOLIA and SOMOLIA-QE in Java) and 1 analyser (PIHORN).
 - * Contributed to the submission of an ARC Discovery project proposal worth AUD 1.5+ million, showcasing strong grant writing and project management skills.

- **Roskilde University** Denmark
Research Associate in Computer Science Nov. 2015 - Jun. 2016

- Demonstrated strong communication and resource management skills through the successful organization of various activities (workshops, meetings, summer schools) aimed at promoting low energy computation.
- Collaborated effectively with partners in the ICT-ENERGY consortia to advance the cause of low energy computation and facilitate the exchange of knowledge.

- **NASA Ames Research Center, Intelligent system Division** California, USA
Visiting Research Scientist March 2015 - Jun. 2015

- Publication of 2 articles related to resource analysis, under the guidance of world-class researchers.
- Developed TAGR-SOLVER, a tool for resource analysis of avionic systems.

- **Fondazione Bruno Kessler** Italy
Research Intern Jul. 2011 - Sept. 2011

- Utilized product and market knowledge to develop a Java-based knowledge store for storing live memories, including photos, videos, and lectures.
- Successfully implemented the knowledge store to provide a platform for users to store and access their memories.

- **F1 Soft International** Nepal
Software Developer 2009-2010
 - Contributed to the development of e-Sewa, a popular payment gateway widely used in Nepal, utilizing business acumen and knowledge of the latest technologies.
 - Enhanced banking software systems and delivered web and mobile applications for a diverse range of clients.

Education

- **Roskilde University** Denmark
PhD in Computer Science 2012 - 2016
 - Thesis: *Components for Automatic Horn clause Verification* (Adv: Prof. J.P. Gallagher)
- **Dresden University of Technology** Germany, Italy, Portugal
European Masters in Computational Logic 2010 - 2012
 - Thesis: *Worst-case execution time of programs* (Adv: Prof. P. Barahona & F. Cassez)

Additional information

- **Personal interests:** Philosophy and Mysticism, Meditation, Mind power, Volunteering, Traveling, Learning Languages.
- **Countries studied or worked:** Australia, Spain, Denmark, United States, Germany, Italy, Portugal, Cuba, Nepal.
Languages: Nepali (mother tongue); English, Spanish (fluent); Portuguese, Italian, German, Danish, Hindi (basic).