

## Santosh YADAV



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### Summary

- Innovative and self-motivated scientist with 6+ years of experience working in both academia and industry, with an ability to design, analyze, project management, research, and consultation, resulted in the completion of 8+ projects, 10+ publications in 4 different countries.
- Excellent time management skills to manage multiple projects, resulting in the successful completion of 5+ projects and collaboration with 20+ team members.
- Demonstrated ability to function in a cross-disciplinary team setting in 8+ projects, resulting in the successful completion of projects

### Work experiences

Ph.D. Researcher

September 2018- December 2021

3SR Laboratoire, UGA, France

- Strong project management skills and attention to detail for conducting 3 dynamics, 11 quasi-static, and 50+ material properties characterization tests
- Time management and leadership skills to mobilized a team of 9 people to complete the construction work of 3 houses within 2 weeks for the dynamic test campaign
- Applied an experimental approach for identifying the potential risk reduction approach for traditional building culture using a seismic band.
- Effective team working skills and adaptability as evidence by the changes made to 3+ experimental works carried after the arson incident in the lab.
- Natural risk mitigation and sustainable approach with cross-disciplinary interaction with 4+ organizations.
- Demonstrated strong communication and scientific outreach as evidenced by 10+ publications, 20+ presentations, and 1 chapters in Road to Research
- Innovative mindset and Problem-solving skills as evidenced by development of new experimental technique for Digital Image Correlation (for dynamic test using a high-speed camera and stereovision setup).
- Product and Market knowledge of 4 Digital Image Correlation software to select the best option of analysis of the test results
- Understanding the available commercial DIC tools and company to prepare the procurement details for the lab
- Relationship building with collaborative research institutes for 2 projects (cyclo Terre and Pise)
- Excellent collaboration skills to a cross-disciplinary team of 6 institutes and developed research catalog and a chapter in the road to research book
- Analyzed and interpreted complex data sets to obtained beneficial results
- Ability to write standard operating procedures for experimental machine set up

- High level technical, statistical, computer skills to manage and analyze more than 6 TB of data generated from the experimental tests

Chief Technical Officer

May 2018- September 2018

Steadfast Nepal Pvt. Ltd., Nepal

- Verified the structural details for prestressed concrete bridge having a span length of 70 m.
- Planned the construction work schedule for the bridge project.
- Project management skills were used for the trial road projects using AggreBind, resulting in 600 m (in India) and 500 m (in Nepal), leading to further project contracts.
- Lead a team of 10+ people to complete the demo road project in the allocated time frame
- Monitored and controlled quality with respect to the structural safety for 3 school building construction.
- Market survey and analysis for heavy machinery for business development and prepare a business plan for 3 projects for investment decision making.

Young Researcher

February 2017- June 2017

3SR Laboratoire, UGA, France

- Researched on the traditional cultural construction technique being used in Nepal and around the world.
- Planned, designed, and carried out experimental tests to determine the seismic response of 3 different materials used as a seismic band based on energy dissipation within 4 months, resulting in the publication of a journal article.
- Found the material and their typology plays an essential role for dissipation of energy which is published in the international journal.
- Investigated the pre-feasibility of such bands in the context of Nepal

Design Engineer

November 2014 – August 2016

Insight Engineering Consult Pvt. Ltd., Nepal

- Carried out structural design of civil components, Chhandi Khola Small Hydropower Project, 2 MW.
- Strong project management and collaboration skills resulting in 4 public projects with the Joint venture team of 3 companies using work scheduling, bidding documents preparation, manpower scheduling and coordination.
- Proposal for new projects were formulated and obtained the contract for 4 projects with \$200,000 (each project).
- Time management and excellent team management skills leading to 3 months earlier completion of the project and generation of revenue for the client.
- Planning and negotiating skills to increase the efficiency of field visits for data collection along with cost reduction for the company
- Successfully planned and organized 5 field visits for 5 different projects to collect data, each comprising of 10-15 team members
- Contributed during the feasibility study of Dudh Koshi-5 HPP (102 MW), Upper Khudi A HPP (18 MW) and Upper Chhandi Khola SHPP (4MW) with a cross-disciplinary team of 20+ members.
- Accomplished the post evaluation of 6 hydropower projects.
- Contributed for Powerhouse Design Guidelines and Inspection Guidelines for Power Plant, Substation, and Transmission lines within the team of 40+ members and 10+ technical advisory members.

- Strategic planning skills using Gantt chart and project professional to monitor the progress of 6 projects and meet the deliverables on time with available resources and budget
- Ability to work collaboratively and cross-functionality during the construction of 2MW hydropower project
- Experience reviewing technical reports, protocols, and other essential documents to extract relevant information leading to the post-evaluation of 6 hydropower projects
- Resolved social conflict at the construction site by address the need of people and the requirement of the project with multi-purpose crossing bridge design.
- Professional awareness to practice ethical representation during the project to ensure the quality of work for the clients.
- Client-facing skills gained with 2 private and 1 public client for 7 projects related to various aspects and progress of the project.
- Legal and regulatory aspects skills as evidenced during the preparation of powerhouse and inspection guidelines by reviewing 50+ references available around the world to extract the relevant information
- Field data collection from 13 powerhouses and analyzed to extract the practiced guidelines during the design, construction, and operation stages of projects.

Research Scientist

October 2013- September 2014

Swiss Federal Institute of Technology Lausanne

- Excellent organizational skills by keeping the experimental data of the fatigue resistance test in welded steel structure for 30+ specimens (multiaxial test on the lateral attachment of plate with fillet weld).
- Micrograph of steel was performed to visualize the heat-affected zone in the welded region in the tested specimen.
- Sound information processing and exploration skills resulted in creating the database (10+ categories, 5000+ data from 40+ years results) for fatigue failure and reanalysis of the test results using finite element methods (ABAQUS).

Quality Analyst

April – May 2014 (6 weeks)

Bolliger & Mabillard Ingenieurs Conseils SA, Switzerland

- Validated the latest version of design software RollWin V2014 which is used for designing the roller coaster.
- Creative and quick learner as demonstrated by identifying 20+ bugs in the software by comparison the results using manual calculation, and SCIA engineer tool, which were reported to the developer for amendment.

Site Civil Engineer

April 2013 (4 weeks)

Nepal Electricity Authority, Nepal

- Supervised the construction work and controlled the quality as per project detailed design and specification for Chameliya Hydropower Project of 30 MW capacity.

## Education

Ph.D. in Civil Engineering

September 2018- December 2021

Master in Earthquake Engineering

September 2016- February 2018

Bachelor in Civil Engineering

August 2009- September 2013

## Skills

Team management	Project management	AutoCAD
Cross-functional team leadership	Finite Element Analysis	ArcGIS
Conflict resolution	Seismic Retrofitting	MATLAB
Client relations	Data analysis	STAAD Pro
Risk analysis	Dynamic similitude	ABAQUS
Microsoft office	Structural Analysis	Python
Civil Engineering	Project Professional	C programming
Modeling	Information management	GOM correlate

## List of Publications

Yadav, S., Sieffert, Y., Vieux-champagne, F., Debove, L., Decret, D., Malecot, Y. & Garnier, P. (2021). Optimization of the use time of shake table with specimen preparation outside the table surface [Submitted to Journal of Experimental Techniques]

Yadav, S., Sieffert, Y., Vieux-champagne, F., Malecot, Y., Hajmirbaba, M., Arléo, L., Crété, E. & Garnier, P. (2021). Shake table tests on 1:2 reduced scale masonry house with application of horizontal seismic bands [Submitting to Journal of Engineering Structures]

Yadav, S., Sieffert, Y., Vieux-champagne, F., Garnier, P., Hajmirbaba, M., Arléo, L., & Crété, E. (2021). Dynamic response of masonry structure with the application of horizontal seismic band: shake table tests [Submitted to 5<sup>th</sup> International Conference Structures & Architecture]

Crété, Eugénie, Julien Hosta, Eefje Hendriks, Aaron Opdyke, Santosh Yadav, Mampionona Rakotonirina, Olivier Moles, Prem Nath Maskey, Ramesh Guragain, Lumanti Joshi, Yannick Sieffert, Philippe Garnier, and Bill Flinn. (2021). "Incorporating Local Building Practices in Response." Pp. 129–36 in *Roadmap for Research: A Collaborative Research Framework for Humanitarian Shelter and Settlements Assistance*.

Damerji, H., Yadav, S., Sieffert, Y., Debove, L., Vieux-champagne, F., & Malecot, Y. (2021). Design of a Shake Table with Moderate Cost. *Experimental Techniques*.  
<https://doi.org/10.1007/s40799-021-00482-0>

Yadav, S., Damerji, H., Keco, R., Sieffert, Y., Crété, E., Vieux-Champagne, F., Garnier, P., & Malecot, Y. (2021). Effects of a horizontal seismic band on seismic response in masonry structure: Application of DIC technique. *Progress in Disaster Science*. <https://doi.org/10.1016/j.pdisas.2021.100149>

Crété, E., Yadav, S., Farahza, N., Arleo, L., Hajmirbaba, M., Sieffert, Y., & Garnier, P. (2020). Understanding traditional anti-seismic strategies beyond their disappearance and distortions: Yazd Qajar Architecture case study. In *12th International Conference on Structural Analysis of Historical Constructions*.

Hosta, J., Garnier, P., Sieffert, Y., Yadav, S., Joffroy, T., et al.. State of knowledge and identification of research priorities for the scientific validation of disaster-resistant building cultures of the Himalayan regions of Nepal: Research report. [Research Report] CRAterre; AE&CC; CDP Risk. 2020, 60 p. ([hal-03116968](https://hal.archives-ouvertes.fr/hal-03116968))

Crete, E., Yadav, S., Sieffert, Y., Hajmirbaba, M., Hosta, J., Mendes, M. F., Garnier, P. (2019). Promoting Vernacular Architecture, A Basis for Building Back Safer? A Case Study from Nepal. In A. R; (Ed.), *Structural Analysis of Historical Constructions* (Vol. 18, pp. 2457–2465). Cusco, Peru: Springer.  
<https://doi.org/10.1007/978-3-319-99441-3>

Damerji, H., Yadav, S., Sieffert, Y., Vieux-champagne, F., & Malecot, Y. (2019). Damage Investigation Of Adobe Walls Using Numerical Damage Investigation Of Adobe Walls Using Numerical. In *7th*

*ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering.*

Yadav, S., Sieffert, Y., Crété, E., Vieux-Champagne, F., & Garnier, P. (2018). Mechanical behavior of a different type of shear band connections being used in reconstruction housing in Nepal. *Construction and Building Materials*, 174, 701–712. <https://doi.org/10.1016/j.conbuildmat.2018.04.121>

Crété, E., Yadav, S., Hofmann, M., Vieux-Champagne, F., Sieffert, Y., Moles, O., & Garnier, P. (2018). Timber seismic bands : correlating their characteristics with local seismic activities and understanding their effects under seismic loads. In *Inter-ISC'18*. Kastamonu, Turkey.

#### **Awards & hobbies**

- IDEX funding scholarship for Ph.D. research
- Erasmus Mundus scholarship for joint master program
- Reading technical blogs, trying new tools & software, cooking