# Laxman Dahal

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## OBJECTIVE

A passionate student data scientist with statistics background and experience in complex simulations, applied data analysis, and Machine Learning. Seeking internship in data science and/or ML/AI.

## EDUCATION

### UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA)

Ph.D. in Earthquake Engineering
Expected: Jan 2024
GPA: 3.86
**Research:** Quantify seismic risk and resilience of wood-frame buildings using statistical and machine learning methods

### UCLA

MS in Statistics
Expected: Jan 2023
GPA: 3.82

## LINKS

Github:// **laxmandahal**
LinkedIn:// **laxman-dahal**
500px:// **amoman6**

## COURSEWORK

### GRADUATE

Causality and Machine Learning
Intro to Deep Learning (Pytorch)
Statistical Programming
Methods of Machine Learning
Matrix Algebra and Optimization
Statistical Methods and Learning
Monte Carlo Methods for Optimization
Statistical Models in Finance
Research Design, Sampling, Analysis

## SKILLS

### PROGRAMMING

Over 10,000 lines:
Python • Matlab • R/R Studio

### DATABASES

MySQL • Microsoft SQL

### PACKAGES

Numpy • Pandas • Matplotlib
Scikit-Learn • Scipy • Pytorch
• SQLite

### FAMILIAR

LaTeX • Git • BASH • C/C++ • Tcl

## INTERNSHIPS

### HASELTON BAKER RISK GROUP LLC

Data Science and Research Intern
Jun 2022 – Present | Chico, CA

- Develop an in-house Python package to perform sensitivity analysis and visualize building recovery trends (processed 30GB+ data)
- Evaluate resiliency trend among buildings using causal inference techniques such as Double Machine Learning
- Implement and deploy an ensemble of classification algorithms (CatBoost, XGBoost, etc.) to predict highly unbalanced multi-label building system types

### DISTRICT DEPARTMENT OF TRANSPORTATION (DDOT)

Data Analytics Intern
Jan 2018 – Aug 2018 | Washington, D.C.

- Conducted a detailed evaluation of the performance-based parking pricing program implemented in the Stadium Zone in D.C.: $25M+ in revenue
- Performed spatial and temporal data analysis in ArcGIS using 2M+ parking data collected between 2015 and 2017
- Collaborated with different divisions within DDOT and third-party contractors to develop easily obtainable data to determine curbside utilization

## RESEARCH EXPERIENCE

### BURTON RESEARCH GROUP @ UCLA | Graduate Researcher

Sept 2019 – Present | Los Angeles, CA
Ongoing Work

- Leverage HPC to perform portfolio-based assessment of 500+ buildings and compile a database with structural response data
- Devise and implement ML-based surrogate model pipeline as an alternative to simulation-intensive approach to predicting structural responses

Completed Work

- Developed an end-to-end Python-based tool to automate design, run analysis, and estimate economic loss of wood-frame buildings
- Investigated uncertainty propagation in seismic risk due to probability model misspecification

## FELLOWSHIPS/LEADERSHIPS

| | | |
|---|---|---|
| 2020-21 | **Grad Representative** | Chancellor's SSF Advisory Committee |
| 2019-24 | **Fellow** | UC- HBCU Fellowship, UC Office of President |
| 2018-19 | **President** | American Society of Civil Engineers, HU Chapter |
| 2015-19 | Fully-funded merit-based scholarship (HU) | |

## SELECTED PUBLICATIONS

[1] **Dahal**, **L.**, Burton, H., and Onyambu, S. Quantifying the effect of probability model misspecification in seismic collapse risk assessment. *Journal of Structural Safety* (January 2022).

[2] **Dahal**, **L.**, Henry, B., and Yi, Z. An end-to-end computational platform to automate seismic design, nonlinear analysis, and loss assessment of woodframe buildings. In *12th National Conference in Earthquake Engineering* (June 2022).