

# Suraj Regmi

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## EDUCATION

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### University of Alabama in Huntsville

Huntsville, US

*MS Computer Science, Data Science concentration, 4.0*

*Aug. 2021 – Present*

**Courses:** Machine Learning, Deep Learning, Reinforcement Learning, Big Data, Design and Analysis of Algorithms

UAH is classified among “R1: Doctoral Universities: Very High Research Activity”.

## TECHNICAL SKILLS

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**Data Science/Machine Learning:** TensorFlow, Keras, PySpark, Sklearn, GeoSpark, (Geo)Pandas, NumPy, matplotlib

**Full stack technologies:** Django (Intermediate), PHP, MySQL (Intermediate), MongoDB, JavaScript, HTML, CSS, Git

## PROFESSIONAL EXPERIENCE

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### Machine Learning Engineer (Graduate Research Assistant)

Aug. 2021 – Present

*NASA-IMPACT, University of Alabama in Huntsville*

*Huntsville, US*

- Enhanced contrail detection system by 30% using deep learning based image segmentation technique (U-Net)
- Increased usability of the image labeling system by automating the incorporation of HiRISE MRO images

### Data Scientist

Jul. 2018 – Aug. 2021

*The World Bank*

*Kathmandu, Nepal*

- Modelled household-level poverty prediction using deep factorization methods, with an F1-score of 0.72
- Coauthored an genetic algorithm based road optimization paper that reduced road construction cost by 2-3 times
- Developed a Python package *nepali-roman* for Nepali transliteration that has more than 31K downloads
- Designed and developed an automated system to calculate real-time R number of Nepal using daily COVID figures
- Developed a Python package *pymobility* and used it with smartphone data to quantify mobility in Southern Asia
- Increased efficiency of the different domain experts but not limited to economists by automating data cleaning/wrangling and GIS tasks using Python
- Designed, prepared course content, and mentored 60+ participants from 12+ organizations on Python and machine learning in “Nepal Data Literacy Program”

### AI Developer

Feb. 2018 – Aug. 2018

*InfoDevelopers Pvt. Ltd.*

*Kathmandu, Nepal*

- Led the AI and software development of Alaska Fur Gallery, an Ecommerce web application build on Django Oscar
- Developed attendance management system for the company, which eventually reduced late arrival time by 50%

## PUBLICATIONS

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- Dixit, A., **Regmi, S.** (2021). Use of alternative data: High frequency readout of the situation–COVID policies, mobility, and R-Number. arXiv preprint arXiv:2109.00050, 2021 - arxiv.org.
- Banick, R., Heyns, A., **Regmi, S.** (2021). Evaluation of rural roads construction alternatives according to seasonal service accessibility using a novel multi-modal cost-time model . Journal of Transport Geography, 93, [103057].
- Heyns, A., Banick, R., **Regmi, S.** (2021). Roads Development Optimization for All-Season Service Accessibility Improvement in Rural Nepal Using a Novel Cost-Time Model and Evolutionary Algorithm. World Bank PRWP.
- World Bank, 2019. Nepal Development Update, December 2019: Envisioning a Future Data Ecosystem in Federal Nepal.

## WORKING PAPERS

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- Banick, R., **Regmi, S.**, Sarma, N. (2022). Exploring smartphone data to estimate mobility in India.
- Bearss, M., Hemming, N., **Regmi, S.**, Alonso, J., Roark, N., Di, V. Petty, M. (2022). Using reinforcement learning to learn Strike Force One game.

## LANGUAGES

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**English:** Fluent (Reading, Writing, and Speaking); **Nepali:** Native