Subigya Nepal

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Education

2023 (Expected) | **PhD in COMPUTER SCIENCE**
Dartmouth College, NH, USA

- Grad-level coursework: Deep Learning, Artificial Intelligence, Machine Learning and Statistical Analysis, Applications of Data Science, Cognitive Computing, Concurrent Algorithms, Robot Design and Program
- Research Interests: Applied Machine Learning, Passive Sensing, Mobile Health
- Advisor: Andrew Campbell

2017 | **BACHELOR OF SCIENCE in COMPUTER SCIENCE**
Deerwalk Institute of Technology, Kathmandu, Nepal

Professional Experience

Sep 2018 to Present | **DARTMOUTH COLLEGE, USA**
Graduate Research Assistant

I primarily work with ubiquitous sensing devices such as mobile phones and wearables, developing apps that can connect to and communicate across different devices and technologies. The human-centered studies that I work on utilize such apps for tracking participants in-the-wild resulting in a large amount of noisy real-world longitudinal data. My research involves performing different analyses leveraging machine learning and deep learning techniques on such multi-modal data to mostly assess and predict human behavior, such as job performance and well-being. My responsibilities include the following:

- Develop Android apps for studies and/or add features to existing code-base.
- Manage the AWS server and write bash/python scripts and web-backends for server side communication.
- Create dashboard for visualization of the collected data in order to track the compliance and data-flow.
- Generate features from the gathered data for further analysis down-the-line.
- Perform analysis on the raw data as well as generated features using different quantitiative analysis approaches such as exploratory data analysis, machine learning and deep learning.
- Communicate the progress of the studies as well as findings to all the stakeholders involved via regular meetings, publications etc.

Technology stack: Python, Java, Android, PyTorch, Scikit-learn, Mlxtend, Mongo, MySQL, JavaScript, Flask, Git, AWS.

Teaching Assistant

- Computer Science Orientation (FALL 2021)
- Smartphone Programming (Spring 2020 and 2019)
- Security and Privacy (FALL 2018)

Aug 2015 to Aug 2018 | **TECHLEKH SERVICES PVT. LTD., NEPAL**
Co-Founder & CTO

TechLekh is a fast-growing technology media startup based in Nepal that I co-founded during my undergraduate studies. We started our operations as a tech media company along with a sister offshoot that specialized in software development services. I led the software development branch, which successfully delivered big projects including educational tech platforms, machine learning products and several web applications. The main startup, TechLekh, is currently one of the leading tech media properties of Nepal and has a large following in the technology scene there. My responsibilities as a Co-founder and CTO were diverse, from managerial, for instance, setting organizational goal to developing products such as while leading the sister organization.

Technology stack: PHP, Laravel, Scikit-learn, REST, Python, Flask, WordPress.

March 2014 to Aug 2015 | **DEERWALK SERVICES PVT. LTD., NEPAL**
SEO Analyst Intern

I was responsible for assessing and optimizing the Search engine visibility and performance of the corporate websites of Deerwalk Inc., a healthcare analytics company and its Nepal based subsidiary, Deerwalk Services Pvt. Ltd. I helped improve the rank and traffic of the websites implementing best practices for both on and off page SEO, primarily focusing on better Google visibility. Deerwalk Inc. has recently been acquired by Cedar Gate Technologies LLC.

Technology stack: Ahrefs, Screaming Frog, Google Adwords, Google Search Console, Google Analytics, Google Script, Hootsuite, WordPress, Google Keyword Planner.

Publications

2022

14. **[Accepted]** S Nepal et al., *COVID Student Study: A Year in the Life of College Students during the COVID-19 Pandemic Through the Lens of Mobile Phone Sensing*, ACM CHI 2022. Acceptance rate: 12.5%.

2021

13. **[Media Coverage]** D Ben-Zeev et al., *A Smartphone Intervention for People With Serious Mental Illness: Fully Remote Randomized Controlled Trial of CORE*, JMIR 2021. Impact factor: 5.43.
12. S Mirjafari, H Bagherinezhad, S Nepal et al., *Predicting Job Performance Using Mobile Sensing*, IEEE Pervasive Computing Magazine 2021. Impact factor: 3.175.
11. **[Media Coverage]** S Nepal, GJ Martinez, S Mirjafari et al., *Assessing the Impact of Commuting on Workplace Performance Using Mobile Sensing*, IEEE Pervasive Computing Magazine 2021. Impact factor: 3.175.
10. W Wang et al., *On the Transition of Social Interaction from In-Person to Online: Predicting Changes in Social Media Usage of College Students during the COVID-19 Pandemic based on Pre-COVID-19 On-Campus Colocation*, ACM ICMI 2021. Acceptance rate: 30%.
9. S Nepal et al., *Current practices in mental health sensing*, ACM XRDS Magazine 2021.
8. **[Media Coverage]** DL Mack et al., *Mental Health and Behavior of College Students During the COVID-19 Pandemic: Longitudinal Mobile Smartphone and Ecological Momentary Assessment Study, Part II*, JMIR 2021. Impact factor: 5.43.

2020

7. S Nepal, S Mirjafari et al., *Detecting Job Promotion in Information Workers Using Mobile Sensing*, ACM UbiComp 2020. Acceptance rate: 20-25%.
6. W Wang, S Mirjafari, ..., S Nepal et al., *Social Sensing: Assessing Social Functioning of Patients Living with Schizophrenia using Mobile Phone Sensing*, ACM CHI 2020. Acceptance rate: 24.3%.
5. **[Best Paper Honorable Mention]** GJ Martinez, ..., S Mirjafari, S Nepal et al., *Improved Sleep Detection Through the Fusion of Phone Agent and Wearable Data Streams*, IEEE PerCom Workshop 2020.
4. GJ Martinez, SM Mattingly, S Mirjafari, S Nepal et al., *On the Quality of Real-world Wearable Data in a Longitudinal Study of Information Workers*, IEEE PerCom Workshop 2020.
3. **[Media Coverage]** JF Huckins et al., *Mental Health and Behavior of College Students During the Early Phases of the COVID-19 Pandemic: Longitudinal Smartphone and Ecological Momentary Assessment Study*, JMIR 2020. Impact factor: 5.43.

2019

2. VD Swain, ..., S Mirjafari, S Nepal et al., *A Multisensor Person-Centered Approach to Understand the Role of Daily Activities in Job Performance with Organizational Personas*, ACM Ubicomp 2019. Acceptance rate: 20-25%.
1. **[Media Coverage]** S Mirjafari et al., *Differentiating higher and lower job performers in the workplace using mobile sensing*, ACM Ubicomp 2019. Acceptance rate: 20-25%.

Miscellaneous

Technical Skills

• Python • Java • JavaScript • Bash Script • Android • Git • Nginx • SQL • MongoDB • PyTorch
• Flask • Laravel • Docker • HuggingFace • FastAI • Scikit-learn • AWS

Volunteer

• Founding Board Member, Better Life Social Organization USA
—› A 501(c)(3) non-profit organization working for disadvantaged children mainly in Nepal
• Founding Member, Dartmouth Nepali Students Association
—› Dartmouth student club for students of Nepali origin

Reviewer

• ACM UbiComp 2019, 2021 • ACM CHI 2021 • ACM CSCW 2021 • Scientific Reports 2021

Awards

• Dartmouth Fellowship (2018), Dartmouth College, USA
• Largest Merit Based Scholarship in the Class of 2017 (2013), Deerwalk Institute of Technology, Nepal

Media Coverage

• *Smartphone intervention feasible for Severe Mental Illness.* HealthDay, Nov 2021. Also covered by Digital Health News and NeurologyAdvisor.
• *Wearable tech confirms wear-and-tear of work commute.* Dartmouth News, Nov 2021.
• *Rates of anxiety and depression among college students continue to soar, researchers say.* Washington Post, June 2021.
• *Coronavirus has made already-stressed college students even more anxious and depressed, study finds.* Washington Post, July 2020.
• *Researchers developed a sensing system to constantly track the performance of workers.* TechCrunch, June 2019. Also covered by Washington Post, Financial Times and Boston Globe, among many others.

Languages

• English (fluent) • Hindi (fluent) • Nepali (native)