

SUBIGYA NEPAL

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EDUCATION

JUN 2024 (EXPECTED)	PhD in COMPUTER SCIENCE Dartmouth College, NH, USA <ul style="list-style-type: none">25+ Papers (10 first-authored), h-index: 12, citations: 1200+Grad-level coursework: Deep Learning, Artificial Intelligence, Machine Learning & Statistical Analysis, Applications of Data Science, Cognitive Computing, Concurrent Algorithms, Robot Design & Programming, Introduction to Human-Computer Interaction (HCI)Research Interests: Applied Machine Learning, AI, Passive Sensing, Mobile/Digital Health, Mental Health and Well-being.Advisor: Dr. Andrew T. Campbell
2017	BACHELOR OF SCIENCE in COMPUTER SCIENCE Deerwalk Institute of Technology, Kathmandu, Nepal

RESEARCH EXPERIENCE

SEP 2018 TO PRESENT	DARTMOUTH COLLEGE, USA <i>Graduate Research Assistant</i> <ul style="list-style-type: none">Developed apps for ubiquitous sensing devices, like mobile phones and wearables, enabling cross-device communication and in-the-wild participant tracking in mental health and wellbeing studies.Analyzed extensive longitudinal data with advanced machine learning and deep learning techniques to assess and predict human behavior, specifically focusing on mental health and wellbeing.Enhanced Android applications for research projects, ensuring seamless integration within existing codebases and maintaining functionality.Managed AWS servers, developing server-side scripts and web backends for efficient data handling and analysis.Participated in multidisciplinary, multi-university collaborative research, particularly with psychologists, psychiatrists, and brain scientists, to identify research challenges and provide technical solutions.Led the design, data collection, cleaning, feature engineering, and machine learning modeling for various NSF/NIH mobile sensing projects at Dartmouth College.Published innovative research in top-ranked journals and conferences in Computer Science, including ACM IMWUT and CHI, contributing to the fields of mobile sensing, machine learning, and human behavioral modeling.Actively involved as a Teaching Assistant, supporting student learning in relevant courses, and regularly presented analytical findings at various academic forums and conferences. Core competencies: Application Development, Human-Centered Study Design, Longitudinal Data Analysis, Machine Learning, Deep Learning, Digital Phenotyping, Mental Health, Digital Health, HCI, Data Visualization, Quantitative and Qualitative Research Methods
JUN 2023 TO SEP 2023	Microsoft Research, Cambridge, MA, USA <i>Research Intern, Human Understanding and Empathy group</i> <ul style="list-style-type: none">Conducted research on the efficacy of Large Language Models (LLMs) in enhancing productivity and well-being among information workers.Executed two studies: an initial user study followed by a subsequent study involving participant interaction with chat agents.Investigated prompt engineering techniques and developed prototypes comparing a chat agent with a generic dashboard to aid information workers in better understanding their workplace behaviors.Engaged in an iterative design process for refining hypotheses and research objectives.Collaborated effectively with team members and interns, actively involving additional stakeholders in the research process.Presented research findings to key stakeholders and led the preparation of the manuscript. Mentors: Drs. Javier Hernandez , Mary Czerwinski Core competencies: LLMs, User Studies, ChatGPT, Prompt Engineering, Chat Agents, Prototyping, User Experience (UX)
JUN 2022 TO SEP 2022	Microsoft Research, Redmond, WA, USA <i>Research Intern (Remote), Human Understanding and Empathy group</i> <ul style="list-style-type: none">Spearheaded two key projects aimed at investigating well-being in the workplace.Project 1: Understanding the dynamics between workplace rhythms and employee well-being.Project 2: Fundamental research on burnout among cybersecurity workers.Managed the entire research pipeline, encompassing study design, ethics review, data collection, analysis, and presentation of results.Facilitated cross-team collaboration and maintained effective communication with a diverse range of stakeholders.Authored two primary manuscripts; one was published at CHI 2023, and the other at CSCW 2024. Mentors: Drs. Javier Hernandez , Mary Czerwinski Core competencies: Project Leadership and Management, Workplace Behaviors, Employee Wellbeing Research, Burnout Analysis, Study Design and Execution, Ethics Review and Compliance, Cross-teams collaboration and Communication

OTHER PROFESSIONAL EXPERIENCE

AUG 2015 TO AUG 2018	TECHLEKH SERVICES PVT. LTD., NEPAL <i>Co-Founder & CTO</i> <ul style="list-style-type: none">• Co-founded TechLekh, a rapidly growing technology media startup in Nepal, during undergraduate studies• Activities include tech media as well as software development services through a sister offshoot• Oversaw delivery of large-scale projects including edtech platforms, machine learning products, and web applications• Currently one of Nepal's leading tech media properties with a significant following• Managed diverse responsibilities such as: setting organizational goals, overseeing managerial tasks, spearheading product development for sister organization Core competencies: Entrepreneurship and Startup Management, Strategic Planning and Goal Setting, Software Development & Engineering, Team Management and Collaboration, Project Leadership and Execution
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SELECTED PUBLICATIONS (FULL LIST: [GOOGLE SCHOLAR](#) | [DBLP](#) | [ACM DL](#))

ACCEPTED OR PUBLISHED	<ol style="list-style-type: none">1. S Nepal, A Pillai et al., <i>Social Isolation and Serious Mental Illness: The Role of Context-Aware Mobile Interventions</i>, Accepted at IEEE Pervasive Computing Magazine 2024.10. S Nepal et al., <i>Contextual AI Journaling: Integrating LLM and Time Series Behavioral Sensing Technology to Promote Self-Reflection and Well-being using the MindScape App</i>, ACM CHI 2024. Acceptance rate: 34%.9. S Nepal, A Pillai et al., <i>MoodCapture: Depression Detection using In-the-Wild Smartphone Images</i> ACM CHI 2024. Acceptance rate: 26%.8. S Nepal et al., <i>Capturing the College Experience: A Four-Year Mobile Sensing Study of Mental Health, Resilience and Behavior of College Students during the Pandemic</i>, ACM UbiComp 2024. [Released the dataset publicly on Kaggle]7. S Nepal et al., <i>Burnout in Cybersecurity Incident Responders: Exploring the Factors that Light the Fire</i>, ACM CSCW 2024. [In press]6. S Nepal et al., <i>Workplace Rhythm Variability and Emotional Distress in Information Workers</i>, ACM CHI 2023. Acceptance rate: 34%.5. S Nepal et al., <i>COVID Student Study: A Year in the Life of College Students during the COVID-19 Pandemic Through the Lens of Mobile Phone Sensing</i>, ACM CHI 2022. Acceptance rate: 12.5%.4. S Nepal et al., <i>Assessing the Impact of Commuting on Workplace Performance Using Mobile Sensing</i>, IEEE Pervasive Computing Magazine 2021. Impact factor: 3.175.3. S Nepal et al., <i>Current practices in mental health sensing</i>, ACM XRDS Magazine 2021.2. S Nepal et al., <i>Detecting Job Promotion in Information Workers Using Mobile Sensing</i>, ACM UbiComp 2020. Acceptance rate: 24%.1. S Mirjafari et al., <i>Differentiating higher and lower job performers in the workplace using mobile sensing</i>, ACM UbiComp 2019. Acceptance rate: 20%.
IN-PREP OR REVIEW	<ol style="list-style-type: none">3. S Nepal et al., <i>Multi-Study Pooling and Adaptation to Boost Mental Health Diagnosis using Mobile Sensing and Deep Learning</i>, In-preparation for Journal of Medical Internet Research, 2024.2. S Nepal et al., <i>From User Surveys to Telemetry-Driven Agents: Exploring the Potential of Personalized Productivity Solutions</i>, Under review at ACM CSCW 2024.1. S Nepal et al., <i>A Survey of Passive Sensing in the Workplace</i>, arXiv 2024.

VOLUNTEERING & AWARDS

VOLUNTEER	<ul style="list-style-type: none">• 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, 2021-2024 • ACM CHI 2021, 2024 • ACM CSCW 2021, 2022 • Scientific Reports 2021
AWARDS	<ul style="list-style-type: none">• Special Recognition for Outstanding Review at CSCW 2023 and CHI 2024 (2x)• Best Poster Award at Dartmouth Digital Health Summit (2023), Dartmouth College, USA• Distinguished Paper Award (2023), ACM UbiComp, Cancún, Mexico• Neukom Outstanding Graduate Research Award (2023), Dartmouth College, USA• Guarini Travel Award (2023), Guarini School of Graduate and Advanced Studies, Dartmouth College, USA• Neukom Travel Grant (2023), Neukom Institute for Computational Science, Dartmouth College, USA• Best Paper Honorable Mention (2020), IEEE Pervasive Computing Workshop

MISCELLANEOUS

TECH SKILLS	• Python • Java • JavaScript • Bash Script • Android • Git • Nginx • SQL • MongoDB • PyTorch • R • PHP • Flask • Laravel • Docker • HuggingFace • FastAI • Scikit-learn • AWS • Azure Cloud Storage • REST • Mlxtend
MEDIA	<ul style="list-style-type: none">• <i>Study Tracks Shifts in Student Mental Health During College</i>. Dartmouth News, March 2024.• <i>AI App That Can Use Facial Cues to Detect Depressions</i>. The Ross Kaminsky Show (iHeartRadio), March 2024.• <i>Pandemic exposed mental health divide among college students, study says</i>. Washington Post, May 2022.• <i>Smartphone intervention feasible for Severe Mental Illness</i>. HealthDay, Nov 2021.• <i>Wearable tech confirms wear-and-tear of work commute</i>. Dartmouth News, Nov 2021.• <i>Rates of anxiety and depression among college students continue to soar, researchers say</i>. Washington Post, June 2021.• <i>Coronavirus has made already-stressed college students even more anxious & depressed</i>. Washington Post, July 2020.• <i>Researchers developed a sensing system to constantly track the performance of workers</i>. TechCrunch, June 2019.
LANGUAGES	• English (fluent) • Hindi (fluent) • Nepali (native)
REFERENCES	• Available upon request.