SUSHANT KAFLE

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225 West Squire Drive, NY 14623

RESEARCH INTERESTS

Human-Computer Interaction; Accessibility; Natural Language Processing; Speech Processing; Machine Learning

CURRENT POSITION

2017 **Rochester Institute of Technology**, Rochester, NY
Research Assistant, Golisano College of Computing and Information Science.
Advisor: Matt Huenerfauth

EDUCATION

Rochester Institute of Technology, Rochester, NY

2016 – **Doctor of Philosophy**, Computing and Information Science

Tribhuwan University, Pulchowk Engineering Campus, Lalitpur, Nepal

2014 **Bachelor of Engineering**, Computer Engineering (Rank: 3rd of 48, GPA: 4.0)
Institute of Engineering: Pulchowk Campus, Tribhuwan University
Thesis: Interest Rate Prediction of Banks – Analyzing social-economic trend to predict the interest rate of banks.

HONORS & AWARDS

2017 RIT Ph.D. Merit Scholarship (2 awards)
2016 ACM ASSETS Doctoral Consortium
2014 The College Fellowship Scholarship (4 awards)
2013 Winner of Integrity Hackathon
2012 Winner of Startup Weekend Kathmandu
2011 Full Scholarship for Bachelors in Engineering Program
2011 Academic Excellence Award

PROFESSIONAL EXPERIENCE

2016 – **Rochester Institute of Technology**, Research Assistant,
Center for Accessibility and Inclusion Research (CAIR) Lab. Creating the Next Generation of Live-Captioning Technologies.
Advisor: Matt Huenerfauth

2014 – 2015 **Viveka Health**, Software Developer
Created web services for eliminating fraud, waste and abuse in medical claims payment process.

2013 – 2014 **Yomari Pvt. Ltd.**, Research Intern
Socio-economic trend analysis from news to predict interest rate of banks in Nepal.

2013 **E&T Nepal Pvt. Ltd.**, Intern
Developed a GUI for realistic rendering of containers (like glass, plastic, metal, wood, fabric etc.) and particles (like smoke, water, molten metal) using appropriate shaders, and using particle physics for simulating particle interaction inside the container.

2012 – 2013 **Verisk Information Technology**, Intern
Optimized and automated Quality Control pipeline used by the company.

PEER-REVIEWED PAPERS PUBLISHED

W.1 **Kafle, S.** and Huenerfauth, M. 2016. Effect of Speech Recognition Errors on Text Understandability for People who are Deaf or Hard of Hearing. *In Proc. of 7th Workshop on Speech and Language Processing for Assistive Technologies (SLPAT),* INTERSPEECH 2016, San Francisco, USA.

RECENT ACADEMIC PROJECTS

2017 **Word Importance Modeling using Speech Based Features.**
Investigated various acoustic features from human speech to see if they provide clues about the *importance* of word being spoken; *importance* in terms of the impact the word has on the understandability of whole sentence/phrase that it is a part of.
Spoken Language Technology, Spring 2017

2017 **Predicting the Usability of Captions Generated by ASR for People who are Deaf or Hard-of-Hearing.**
Investigated various linguistic features to design a better metric to evaluate the usability of automatically generated captions for people who are Deaf or Hard of Hearing (DHH).
Introduction to Natural Language Processing, Spring 2017

2016 **Empirical Analysis of Error Produced by Automatic Speech Recognition Systems.**
Categorized and evaluated different types of errors commonly produced by Sphinx4 Speech Recognition System on 100hrs of speech recordings from LibriSpeech Corpus. Implemented output alignment modules to account for fuzzy time-stamp matching and, one to many and many to one substitution errors. Created a local compute cluster to make the speech recognition faster.
Foundations of Cyberinfrastructure, Spring 2016

TALKS AND POSTERS

2017 Word Importance Modeling to Improve Automated Caption Display for People who are Deaf or Hard of Hearing.
Kafle, S., Berke, L., Caulfield, C., and Huenerfauth, M.
[*Poster*] *Graduate Symposium, Rochester Institute of Technology*

2017, 2016 Modeling the Effect of Speech Recognition Errors on Text Understandability for People who are Deaf or Hard of Hearing.
Kafle, S. and Huenerfauth, M.
[*Poster*] *Move78 Retreat '17, Rochester Institute of Technology*
[*Talk*] *ASSETS Doctorial Consortium '16*
[*Poster*] *The 14th Int'l ACM SIGACCESS Conference on Computers and Accessibility*

PROFESSIONAL AFFILIATION & MEMBERSHIP

- Student Member of Association for Computing Machinery (ACM)

TECHNICAL SKILLS

- Programming Languages: Python, Java, C/C++, MATLAB, R.
- Markup Languages & Web: HTML/5, CSS, Javascript, Django, Spring Framework, PHP.
- Databases & Query Languages: SQL, MySQL, PL/SQL.