

ACL 2020

**Natural Language Processing
for Medical Conversations**

Proceedings of the Workshop

July 10, 2020

Online

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ISBN 978-1-952148-20-0

Introduction

Welcome to the ACL 2020 Workshop on NLP for Medical Conversations.

Primary care physicians spend nearly two hours on creating and updating electronic medical/health records (EMR/EHR) for every one hour of direct patient care. Additional administrative and regulatory work has contributed to dissatisfaction, high attrition rates and a burnout rate exceeding 44% among medical practitioners. Recent research has also linked burnout to medical errors, showing doctors who report signs of burnout are twice as likely to have made a medical error. It is imperative to find a solution to minimize causes of such errors, via better tooling and visualization or by providing automated decision support assistants to medical practitioners.

First steps towards introducing automation for clinical documentation have recently emerged. These include approaches from end-to-end clinical documentation to the development of a dialog system with virtual patients for physician training. Commercial products include offerings from large corporations like Microsoft, Nuance, Amazon, and Google to many upcoming startups.

The goal of this workshop is to bring together NLP researchers and medical practitioners, along with experts in machine learning, to discuss the current state-of-the-art approaches, to share their insights and discuss challenges. This is critical in order to bridge existing gaps between research and real-world product deployments, this will further shed light on future directions. This will be a one-day workshop including keynotes, spotlight talks, posters, and panel sessions.

Our call for papers for this inaugural workshop met with a strong response. We received 20 paper submissions, of which we accepted 9 papers with acceptance rate of 45%. Our program covers a broad spectrum of applications and techniques. It was augmented by invited talks from Tanuj Gupta (Cerner), Adam Miner(Stanford), Anitha Kannan(Curai), Steven Bendrick(OHU) and Judy Chang(UPSM).

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Invited Speaker:

Tanuj Gupta (Cerner)
Adam Miner(Stanford)
Anitha Kannan(Curai)
Steven Bendrick(OHU)
Judy Chang(UPSM)

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Conference Program

Friday, July 10, 2020

09:00–10:30 Morning Session I

09:00–09:15 *Welcome and Opening Remarks*

09:15–10:00 *Invited Talk*
Tanuj Gupta

10:00–10:15 *Methods for Extracting Information from Messages from Primary Care Providers to Specialists*
Xiyu Ding, Michael Barnett, Ateev Mehrotra and Timothy Miller

10:15–10:30 *Towards Understanding ASR Error Correction for Medical Conversations*
Anirudh Mani, Shruti Palaskar and Sandeep Konam

11:00–12:30 Morning Session II

11:00–11:45 *Invited Talk*
Anitha Kannan

11:45–12:30 *Invited Talk*
Steven Bendrick

Friday, July 10, 2020 (continued)

13:30–15:30 Afternoon Session I

13:30–14:15 *Invited Talk*
Judy Chang

14:15–14:30 *Studying Challenges in Medical Conversation with Structured Annotation*
Nan Wang, Yan Song and Fei Xia

14:30–14:45 *Generating Medical Reports from Patient-Doctor Conversations Using Sequence-to-Sequence Models*
Seppo Enarvi, Marilisa Amoia, Miguel Del-Agua Teba, Brian Delaney, Frank Diehl, Stefan Hahn, Kristina Harris, Liam McGrath, Yue Pan, Joel Pinto, Luca Rubini, Miguel Ruiz, Gagandeep Singh, Fabian Stemmer, Weiyi Sun, Paul Vozila, Thomas Lin and Ranjani Ramamurthy

14:45–15:00 *Towards an Ontology-based Medication Conversational Agent for PrEP and PEP*
Muhammad Amith, Licong Cui, Kirk Roberts and Cui Tao

15:00–15:15 *Heart Failure Education of African American and Hispanic/Latino Patients: Data Collection and Analysis*
Itika Gupta, Barbara Di Eugenio, Devika Salunke, Andrew Boyd, Paula Allen-Meares, Carolyn Dickens and Olga Garcia

15:15–15:30 *On the Utility of Audiovisual Dialog Technologies and Signal Analytics for Real-time Remote Monitoring of Depression Biomarkers*
Michael Neumann, Oliver Roessler, David Suendermann-Oeft and Vikram Ramnarayanan

16:00–18:00 Afternoon Session II

16:00–16:45 *Invited Talk*
Adam Miner

16:45–17:15 Lightning Talk

17:15–17:30 *Robust Prediction of Punctuation and Truecasing for Medical ASR*
Monica Sunkara, Srikanth Ronanki, Kalpit Dixit, Sravan Bodapati and Katrin Kirchhoff

17:30–17:45 *Topic-Based Measures of Conversation for Detecting Mild Cognitive Impairment*
Meysam Asgari, Liu Chen and Hiroko Dodge

17:45–18:00 Closing Remarks

Friday, July10,2020 (continued)

