

Pre-Talks, a new paradigm for an e-talk equivalent to preprints.

Dr Bheemaiah, Anil Kumar, B.C Seattle W.A 98125
miyawaki@yopmail.com

Abstract:

Pre-Talks are introduced as an equivalent of pre-prints to be added to repositories for open publishing to accompany pre-prints, which can optionally be inherited in peer review as quality assurance, to be published in journals or conferences.

We present an Alexa skill 8980, part of a pre-talk for a paper on Mixed reality in Neurodiversity, part of the CSIS 8980 course at UMN Twin Cities. ANother example is the inclusion of an academic CRM and SME system, for posters, based on DialogFlow presented at the Hamline Symposium, at Hamline University, as part of this conference, a poster with the SME was presented.

Thus academic CRM systems and pre-talks are presented with the use of VUI for the offline and automated presentation of slide show talks and the use of VUI for academic customer relationship management, with query handling and automated QnA sessions.

Keywords: CRM systems, dialog systems, VUI, automated presentations, pre-talks, slide talks

What:

Preprints and eprint repository have created a new mode of open research and publishing heralding a new era in scientific research, akin to the open source software movement, poster talkoids, creates the bridge between passive posters and active talks, leveraging VUI technology, towards the creation of pre-talks, an VUI for slide based automation of tasks with automated support for questions pertaining to the slide talk. The role of such collections of eprints and pre-talks in MOOC elearning content creation is explored for open elearning in the graduate level.

How:

Google Dialog Flow with a number of integrations, creating talkoids, with facebook messenger, Alexa and Cortana/web integrations, with slide share from linkedin, is used as a talkoid repository combining preprints with on demand presentations. Similar to arxiv, this approach allows the inheritance of the preprints on consent of the authors reviewed publications and conferences if required, heralding a new era of open publishing.

Why:

Conferences are resource crunchers, sinking valuable funding into logistics and travel, necessitating much wasted effort in travel and hospitality rather than collaborative science. Talkoids, is an open source alternative using cloud based services for Poster Pre-Talk creation, impersonal, yet authored content with a simple presentation and a rich VUI for query and question resolution, with a rich knowledge base and an ease to summarized content.

Summary:

Main Points:

1. A pre-talk is defined as an interactive VUI media, with automated, on demand presentation of slides using TTS systems and an integrated CRM system.
2. Knowledge management expert systems are integrated into the VUI, as a SME or subject matter expert.
3. Design of an academic CRM system with many channels of interaction and handling of flow to human subject matter experts.
4. Demonstration with three VUI systems, Google DialogFlow, Amazon Alexa and Facebook messenger.

Applications:

Preprint repositories, MooC course content, LMS systems, Impact Factor analysis and metrics.

Introduction.

Integration of VUI to a facebook messenger bot integrated to this page.

Problem Definition.

Creation of a Poster Talkoid from the following specifications:

Given a slide presentation with notes, Let each slide S have a DOM model with note object n . The DOM model of the presentation will be a collection with the ordering of the slides S_i . Given a set of documents D and a QnA document with a DOM structure of [intents, Answer], we define a Taskoid using AWS for A.I assisted teaching, creating a conversational UI for the presentation of the slides and for answering questions([No Title], n.d.)

Creation of a VUI based solution using Google DialogFlow in lieu of AWS Sumerian and Lex. Creation of Facebook Pages for each Talkoid, with knowledge document set D .

Background.

<original-contribution>

DialogFlow from Google, is an easy to use graphical interface for the upload of a slide presentation $[S]$ with a set of corresponding notes $[n]$, knowledge set with a QnA documents of intent names, utterances and text responses. Rich responses have a DOM structure described in JSON, with urls for each slide image as stored on the facebook page and linked with a text payload.

A template generator [Jss] is generated with card payload to create the intents for the slide presentation with text to speech rendering of the notes in each slide DOM structure.

The QnA document has intents, utterances and text responses as comma separated values, converted to JSON using a JSON generator for uploading the QnA document as a set of intents.

Adding Knowledge connectors.

Automating the addition of knowledge connectors uses two templates.(Ega, 2019)

T1 = "A sample node.js script to create a knowledge base would look like this

```
const dialogflow = require('dialogflow').v2beta1;
```

```
const client = new dialogflow.KnowledgeBasesClient();
```

```
// const projectId = 'ID of GCP project associated with your Dialogflow agent';
```

```
// const displayName = 'your knowledge base display name, e.g. myKnowledgeBase';
```

```
const formattedParent = client.projectPath(projectId);
```

```
const knowledgeBase = {  
  displayName: displayName,  
};
```

```
const request = {  
  parent: formattedParent,  
  knowledgeBase: knowledgeBase,  
};
```

```
const [result] = await
```

```
client.createKnowledgeBase(request);
```

```
console.log('Name: ${result.name}');
```

```
console.log('displayName: ${result.displayName}');"(Ega, 2019)
```

T2 = "Sample script to add a document to the knowledge base

```
// Imports the Dialogflow client library
```

```
const dialogflow = require('dialogflow').v2beta1;
```

```
// Instantiate a DialogFlow Documents client.
```

```
const client = new dialogflow.DocumentsClient({
```

```
  projectId: projectId,  
});
```

```
// const projectId = 'ID of GCP project associated with your Dialogflow agent';
```

```
// const knowledgeBaseFullName = 'the full path of your knowledge base, e.g
```

```
my-Gcloud-project/myKnowledgeBase';
```

```
// const documentPath = 'path of the document you'd like to add, e.g.
```

```
https://dialogflow.com/docs/knowledge-connectors';
```

```
// const documentName = 'displayed name of your document in knowledge base, e.g. myDoc';
```

```
// const knowledgeTypes = 'The Knowledge type of the Document. e.g. FAQ';
```

```
// const mimeType = 'The mime_type of the Document. e.g. text/csv, text/html,text/plain, text/pdf etc.';
```

```
const request = {
```

```
  parent: knowledgeBaseFullName,
```

```
  document: {
```

```
    knowledgeTypes: [knowledgeTypes],
```

```
    displayName: documentName,
```

```
    contentUri: documentPath,
```

```
    source: 'contentUri',
```

```
    mimeType: mimeType,
```

```
  },
```

```
};
```

```
const [operation] = await
```

```
client.createDocument(request);
```

```
const [response] = await operation.promise();
```

```
console.log('Document created');
```

```
console.log('Content URI...${response.contentUri}');
```

```
console.log('displayName...${response.displayName}');
```

```
console.log('mimeType...${response.mimeType}');
```

```
console.log('name...${response.name}');
```

```
console.log('source...${response.source}');"(Ega, 2019)
```

Parametric genome, TDNA =

[knowledge base display name, projectId, full path of

your knowledge base, path of the document you'd like to

add, displayed name of your document , The mime_type of

the Document. e.g. text/csv, text/html, text/plain, text/pdf etc]

With string substitution in T1 and T2 as transcription.

</original-contribution>

Pre-Talk at Hamline Symposium.

The pre-talk demonstrated at the Hamline Symposium, included in the figure below, (Bheemaiah, 2021)



Includes a link to a SME or subject matter expert VUI, based on dialog flow, trained with a knowledge base of all the references in the publication and a base of questions and answers, expected from a normal audience. It also includes the template for a CRM system, included in DialogFlow for the integration of one or more human subject experts.

Facebook based demonstration of a pre-talk.

(Log into Facebook, n.d.) is a webpage honoring Dr Miyawaki's contributions , it also demonstrates the use of the Messenger application as a dialog based system presenting a talk on the publication, (Bheemaiah 2019)

Amazon Alexa based talk skill.

Amazon alexa is used to present the skill 'Mixed Reality in Neurodiversity', which is a skill available on all Alexa devices, this uses VUI to automate the presentation of the talk and answers questions the audience may have, the skill also integrates, (Website, n.d.) the previously described SME based CRM system. The skill is in the process of being published.

Discussion.

An offline, interactive VUI, for poster and conference presentations, called a pre-talk is presented as a CRM system, with a subject matter expert system, based VUI interface. The design architecture is demonstrated with three VUI frameworks, DialogFlow, Facebook messenger and Amazon Alexa.

Thus pre-talks are available as interactive media and VUI, to accompany pre-prints and coupled with automated quality assurance systems may soon replace honorary peer review systems in a system of open published talks and scientific publications.

The design of the CRM system, allows for a SME to use an expert system with a corpus of both the references cited in a publication, but also several publications mined from the semantic web by the SME software, with a handover to human subject matter experts, as required.

Future Work.

Recent trends in quality assurance in academic publishing,(Heaven, 2018) has seen the replacement of honorary peer review systems, with automated reviewing and remunerated machine learning based metric based systems, with a spectrum of open published literature with impact factor (Contributors to Wikimedia projects, 2004) (DeGroote, 2010)metrics to a selection of 'reviewed' publications with a higher impact and hence a higher emergent norm of quality in a quality assurance system.

References.

Contributors to Wikimedia projects. (2004, October 3). *Impact factor*. Wikimedia Foundation, Inc.
https://en.wikipedia.org/wiki/Impact_factor
DeGroote, S. (2010). *Subject and Course Guides: Measuring Your Impact: Impact Factor, Citation Analysis, and other Metrics: Measuring Your Impact*.
<https://researchguides.uic.edu/if/yourimpact>
Ega, A. (2019, May 21). *Dialogflow Knowledge connectors*. Medium; Medium.

https://medium.com/@avinash.ega_47164/dialogflow-knowledge-connectors-b008a80a697

Heaven, D. (2018). AI peer reviewers unleashed to ease publishing grind. *Nature*, 563(7733), 609–610.

Kumar, B. A. (2021). *Autistic Savants: Visiting the Math Gym*.
<https://doi.org/10.5281/zenodo.4603357>

Log into Facebook. (n.d.). Retrieved March 13, 2021, from
<https://www.facebook.com/login/?next=http%3A%2F%2Fwww.facebook.com%2FAkiraMiyawakiAtMutterGottlich>

[No title]. (n.d.). Retrieved October 31, 2019, from <http://vixra.org/pdf/1908.0495v1.pdf>

Website. (n.d.). Retrieved March 13, 2021, from Dr. Bheemaiah Anil Kumar. (2021, March). Mixed Reality in ASD Interventions. (Version 1.0). Zenodo.
<http://doi.org/10.5281/zenodo.460334>

Bheemaiah, A., Dr. (2019, August 22). Mapillary based plant distributions of ethnobotanical afforestation.
<https://doi.org/10.31224/osf.io/8nwfj>