# Enhancing Real-Time WebRTC Conversation Understanding Using ChatGPT

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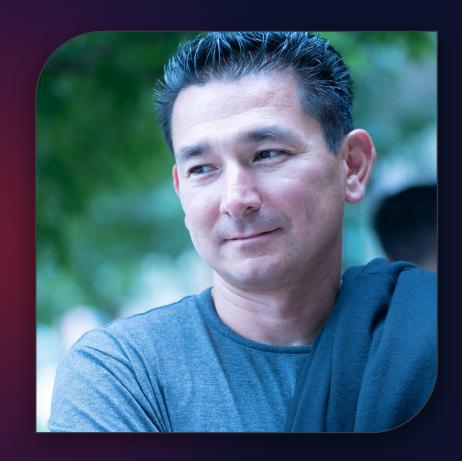**Software Engineer/Developer Advocate**
**@dvonthenen**

# David vonThenen

- Are you Human or an AI?
- I want 5 Kubernetes
- Virtual Machines are Real
- Replacing Myself with Bots...
- Cloudy, cloudy, cloudy...
- There is storage for that!

**@dvonthenen**

# Agenda

- **Conversation Understanding**

- **Why ChatGPT and LLMs?**

- **WebRTC + ChatGPT Goodness!**

- **Demo**

- **Q&A**

# Conversation Understanding

# Uhhh, Say Again?

- Virtual Meeting Statistics
  - Zoom hosts 300M Meetings a DAY!
  - Virtual Meeting Increase 48% to 77% (2020->2022)
  - Predicted 2021->2028 Increase 23.7%
  - Average Person: 4 Hours per Week
- Opportunity to "Record" These Meetings
  - Automatic Speech Recognition (ASR)
- We Need Accurate Transcriptions!
  - Word Error Rate (WER) and Confidence

# Conversation Understanding

- Conversational AI is Combination of…
  - Automatic Speech Recognition (ASR)
  - Extracting Context From Dialog
  - Art of "Simulating" Conversation
- Things Going Wrong…
  - Autocorrect on Your Phone
  - Poor Transcription (Chachi PT)
- Extracting Conversation Insights:
  - "Where is David going on vacation in 2 days?"

# Do You Follow Me?

- **More Knowledge, Meta(data), Higher-level Constructs…**
  - Dog vs Chocolate Labrador named Charlie
- **Previously: Parsing and Trigger Actions**
- **Opportunity: Digest and <u>Participate</u>**
  - Books, Webinars: One Way Conversations
  - Telephony, Meetings, Chat: Two/Multi Way
- **Participation is the Key!**
  - Asynchronously: Post Analysis
  - Real-time: Influence the Conversation

# Why ChatGPT And LLMs?

# Smart Engagement & Influence

- **Historically, Chatbots Reacted to Keywords**
  - Simplistic at Best
  - Triggers Actions based on Code

- **ChatGPT Democratized Chatbots, LLMs, etc**
  - Human–like Responses in Sentences
  - Interaction in Conversation Format

- **Why Have They Been Successful?**
  - Meaningful Participation
  - Conversation Understanding?

# Meaningful Participation



- **How Do We Achieve Conversation AI?**
  - Machine Learning (ML)
  - Next Token Prediction Engines
- **Bring Value to the Conversation**
  - Relevant Insights (Just Predictions)
  - Collaborate Seamlessly
- **Predictions So Good = <u>Meaningful</u>?**
  - Hallucinations  <u>Link1</u> <u>Link2</u>
  - Illinois Tech 🎉 – <u>ChatGPT Benchmarks</u>

GPT-4 Passes the Bar Exam
https://www.iit.edu/news/gpt-4-passes-bar-exam
Daniel Martin Katz - IIT Website

Lost In Translation. Funny True Miscommunication
https://www.linkedin.com/pulse/lost-translation-funny-true-miscommunication-tony-j-hughes/
Tony J. Hughes - LinkedIn

# WebRTC + ChatGPT Goodness!

# Enhancing WebRTC

- Perfect Storm of Goodness
  - Communication Platforms: WebRTC
  - Conversational AI: ChatGPT
- Open Source WebRTC Application
  - ChatGPT to Keep Context of Conv.
  - Ask ChatGPT for Relevant Insights
  - Response with a Voice!
- Let's see it instead...

# Demo

Huge Shoutout to:
Théo Monnom – Bio Twitter
Russ d'Sa – Bio Twitter

KITT
https://livekit.io/kitt
https://blog.livekit.io/meet-kitt/

# Demo via YouTube

# Resources, Links, etc

- **KITT** – Kaleidoscopic, Interconnected Talking Transformer
  - Théo Monnom – Bio Twitter
  - Russ d'Sa – Bio Twitter
  - Code Original: https://github.com/livekit-examples/kitt
  - Modified Code: https://github.com/dvonthenen/kitt
- **Chat-GPEasy** – https://github.com/dvonthenen/chat-gpeasy
  - Opinionated OpenAI Client
- **Google Speech-to-Text API**
- **Google Text-to-Speech API**

# Questions?

# Thank You!

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