# Kranky Geek Research

ARTIFICIAL INTELLIGENCE IN REAL TIME COMMUNICATIONS

2018

STUDY OVERVIEW

Advances in AI technologies are now finding new applications and use cases as these capabilities become democratized. The communications industry, which was once at the forefront of many of these technologies, is now presented with a plethora of new options for improving existing applications, finding new cost advantages, and redefining existing communications modalities.

This study examines the role of Artificial Intelligence (AI) and Machine Learning (ML) in Real Time Communications (RTC). It is designed to help product, strategy, and business development decision makers communications service providers, technology vendors, communications-centric app providers, and enterprise information technology organizations.

| Speech Analytics | Computer Vision | Voice Bots | RTC Optimization |

Machine Learning

Real Time Communications

AI in RTC
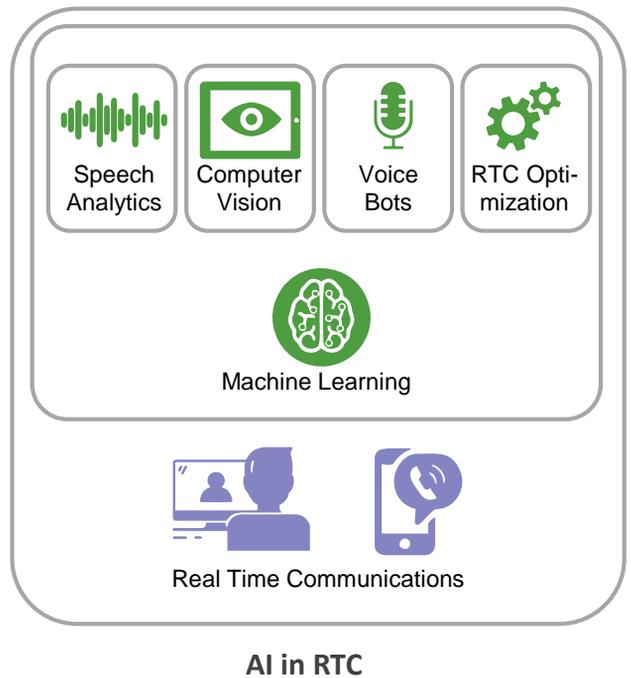
The study will be answering key questions such as:

- What are the capabilities and limitations for machine learning in communications?

- Can technologies created by Google, Amazon, Facebook, IBM and other industry giants be repurposed for the communications-centric applications of other providers?

- What communications AI use cases already exist?

- What new applications are likely to emerge?

- How can Machine Learning be used to improve communications costs and performance?

- What resources and investments are required to add machine learning based features to an existing product portfolio?

- Who are the leading speech analytics, computer vision, voice bots, and performance algorithm vendors and projects?

- What vendor and technology selection criterion should be considered?

The report authors have years of experience in technical, product management, and consulting roles evaluating and applying new technologies, including practical work with speech analytics, computer vision, voice bots, and performance algorithms. Together they bring unique insight and supporting data for product owners, analysts, and anyone that has a key stake in advancing the communications market.

METHODOLOGY

Thought leader interviews
In-depth 1-on-1 interviews with key industry technology suppliers, leading vendors in speech analytics, computer vision, voice bots, and machine learning tools.

Industry web survey
Aimed at the broader real time communications market to supplement and prioritize more in-depth interviews

Product review
The authors will review all major machine learning products, solutions, and open source projects as identified through primary and secondary research

Analysis
Using the above inputs, the authors will provide actionable analysis and frameworks for rapid understanding

AUDIENCE

Communications service and application providers
Looking to enhance their products and services

Contact Centers and IT organizations
Aiming to leverage AI in their customer and employee communications

AI technology vendors
Targeting businesses in communications vertical and working to enhance telephony oriented features

Investors
Looking for an impartial analysis of the opportunities in communications-centric AI applications

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EXPERTISE

KGR

KGR is a subsidiary of Kranky Geek, LLC, a technology event company. Kranky Geek has held 7 international events. Their last event focus on AI topics including speech analytics and natural language processing for telephony, blending WebRTC with Augmented Reality (AR), using computer vision for detecting inappropriate behavior on video, Machine Learning for improving RTC, video quality, and using Tensorflow to optimize congestion control.

See more at link remember to put our new webpage here

Tsahi Levent-Levi

Tsahi is an independent analyst and consultant for WebRTC, communications, and AI where has has authored many widely read reports and whitepapers. Tsahi Levent-Levi has over 15 years of experience in the telecommunications exploring and implementing new technologies as an engineering, manager, marketer and CTO. Tsahi holds a Computer Science Masters Degree from where his thesis was on machine learning in computational linguistics.

Learn more about Tsahi at bloggeek.me.

Chad Hart

Chad Hart is an independent consultant and blogger at webrtcHacks.com and cogint.ai, a blog focused on exploring the intersection of AI and communications. Chad recently ran a new product incubator where he brought many new product experiments to market including Emergency Service 911 calling for Alexa and launching a production speech analytics service. Chad's professional experience includes authoring several large market research studies as an analyst, corporate business intelligence, and product management.

Learn more about Chad at cwh.consulting.

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CONTENT HIGHLIGHTS

Table of Contents	Key Topics
1. Executive summary	Review of primary report findings
2. Scope & Methodology	Details on how the report was created

3. Machine Learning Overview
    a.Supervised and unsupervised learning
    b.Deep learning
    c.ML data flow
    d.Product aspects of machine learning
    e.Limitations
	✓ Short explanation on machine learning
	✓ Review of different machine learning algorithms and techniques
	✓ How machine learning manifests itself in existing products and services
	✓ What should product owners know and consider when adding AI into their services
	✓ What are the limitations and caveats of current day machine learning algorithms and methodologies

4. Speech Analytics
    a.Market overview & trends
    b.Use cases & applications
    c.Vendor landscape
    d.Selection criteria
	✓ Transcription vs. Natural Language Processing (NLP) vs. Natural Language Understanding (NLU)
	✓ Running in the cloud vs. on-premise
	✓ How do emerging startups compare to technology giants like Google, Microsoft, Amazon, etc.
	✓ Critical features for RTC applications
	✓ Primary use cases such as call center management, sales improvement, etc.

5. Computer Vision
    a.Market overview & trends
    b.Use cases & applications
    c.Vendor landscape
    d.Selection criteria
	✓ Which use cases & apps make sense for RTC- i.e. facial identification, gesture tracking, object detection
	✓ Privacy, security, and regulatory considerations
	✓ Speed to market vs. affordability
	✓ Building a pipeline vs. consuming existing API's and models
	✓ Deployment options - cloud vs. premise vs. embedded

6. Voice bots & assistants
    a.Market overview & trends
    b.Use cases & applications
    c.Vendor landscape
    d.Selection criteria
	✓ Differences between chat bots, voice bots, and voice assistants
	✓ Use cases - voice dialers, in-call assistants, IVR, etc.
	✓ Voice assistant ecosystem comparison - Alexa Google, Cortana, etc.
	✓ Benefits and disadvantages of joining a voice ecosystem

7. RTC quality & cost optimization
    a.Market overview & trends
    b.Use cases & applications
    c.Technology landscape
    d.Decision criterion
	✓ Traditional RTC optimization techniques vs. newer ML approaches
	✓ Tools and technology options
	✓ How RTC technology suppliers are using ML to improve user quality
	✓ Fastest ROI paths for cost optimization

8. AI in RTC survey results	Quantitative analysis of web survey results
9. Vendor profiles	Selected profiles of leading vendors

COMPANIES COVERED

Below is a starting list of companies that will be analyzed. This list will be expanded throughout the course of the study.

✓ AISense	✓ Dialpad / TalkIQ	✓ Nuance
✓ Amazon	✓ ExecVision	✓ Omilla
✓ Apple	✓ Facebook	✓ RealEyes
✓ Aspect	✓ Genesys	✓ Serenova / Telstrat
✓ Atlassian	✓ Gong	✓ Sestek
✓ Avaya	✓ Google	✓ SpeechMatics
✓ Blippar	✓ Gridspace	✓ Twilio
✓ CallMiner	✓ IBM	✓ Verint
✓ Chorus.ai	✓ Kairos	✓ Voicebase
✓ Cisco	✓ Microsoft	✓ Voiceera
✓ Clarifai	✓ Mycroft	✓ Voxbone
✓ Cogito	✓ NewVoiceMedia	✓ VoxImplant
✓ Deepgram	✓ NICE inContact	✓ Zoom.ai

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