

**Customisable chatbot solution adaptable to different industry domains in mixed Cantonese, English and Mandarin environments.**

### Keywords:

- Smart City, FinTech, call-centre automation, report transcription, speech recognition, chatbot, mixed-language, Cantonese
- Artificial intelligence (AI), natural language processing (NLP), text-to-speech, speech-to-text, big data, version control

### Problems addressed

- Most chatbot solutions on the market are not capable of recognising conversations with mixed use of Cantonese, English, and Mandarin
- Most chatbot solutions offer limited customisation capabilities for users to update knowledgebases with domain-specific vocabularies
- Customisable chatbots are not user-friendly for non-technical users

ASTRI's AI Chatbot addresses these pain points by leveraging deep learning, big data analytics, and speech recognition with NLP. It is proven effective in enhancing operational efficiency and improving customer experience by accurately addressing over 80% of customer enquiries and transcription needs in mixed language environments.

### Innovations

**The AI Chatbot with speech-to-text capabilities understands Hong Kong's local mix of Cantonese, English, as well as jargons and slangs. The innovation also includes the followings:**

- **Speech recognition** engine that can recognise and segregate voices of multiple speakers in a group conversation
- **Voicebot** that can respond to inquiries in the corresponding language
- **Domain-specific database** management platform for non-IT users to build and customise client-specific knowledgebase
- **Big data** and **NLP analysis** for analysing enquiries that are not supported by prior data training or any existing keywords databases
- **Real-time language** analysis with automated punctuation insertion into transcribed texts
- **Version control** enabling transparent updates and minimizing interference
- **Server-based system** offering enhanced security to accommodate sensitive client information and to reduce cost for future modifications

### Key impact

- Improved customer experience in client-facing operations
- Enhanced operational efficiency of transcribing interviews and reports
- Improved risk management with real-time analysis of digitized contents
- Scalable deployment across different industry domains supported

### Innovation snapshot

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### Project completed

- March 2019

### Applications

- Automated customer service
- Real-time transcription in various industries
- Audio recording compliance analysis
- Automated email sorting by purpose

### Patent(s)

- US App. No. 16/818,702;  
CN App. No. 202080000380.2 and  
HK App. No. 62021026953.1

[ASTRI Patent Search](#)

### Commercialisation opportunities

- IP licensing
- Technology co-development

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