Title: Unleashing the Potential of Artificial Intelligence in Translation: From General Applications to Purpose-built Innovations

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Abstract: Recent rapid advancements in artificial intelligence (AI) have led to ground-breaking applications in language processing, such as neural machine translation and AI-powered chatbots. This study explores the potential of AI-driven translation technology, from general tools to specialised solutions tailored for specific domains. We highlight three custom-developed applications from our recent research projects.

We first provide an overview of AI tools for general translation, discussing their strengths and limitations. We then propose strategies for leveraging these applications in professional translation by identifying essential knowledge and skills for translators and key directions for developers.

Subsequently, we shift our focus to AI for specialised translation, showcasing three innovative tools from our recent projects: IPOTranslate*, GovPR Translation†, and DharmaBridge††. IPOTranslate is a specialised tool for translating initial public offering (IPO) prospectuses, employing artificial neural networks trained on bilingual data. GovPR Translation combines neural machine translation and translation memories to effectively translate Hong Kong government press releases. DharmaBridge is an AI solution specifically designed to translate texts associated with Humanistic Buddhism.

This study highlights the potential of harnessing AI advancements to enhance translation technology, from general applications to customised solutions. By embracing these innovations, translators and developers can collaborate to devise novel solutions addressing industry challenges, improving the overall quality and efficiency of translation services across domains.