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Brief Guide to Cloud-Based AI Prototyping: Key Insights from Selected Case Studies Using Google Cloud Platform

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Abstract : Recent advancements in cloud computing and storage, along with rapid progress in artificial intelligence (AI), have transformed approaches to developing efficient, scalable applications. However, integrating AI with cloud computing poses challenges as these fields are often disjointed, and many advancements remain difficult to access, obscured in complex documentation, or scattered across research reports. For this reason, we share experiences from prototype projects combining these technologies. Specifically, we focus on Google Cloud Platform (GCP) functionalities and describe vision and speech activities applied to labeling, subtitling, and urban traffic flow tasks. We describe challenges, pricing, architecture, and other key features, considering the goal of real-time performance. We hope our demonstrations provide not only essential guidelines for using these functionalities but also enable more similar approaches.

Keywords : artificial intelligence, cloud computing, real-time applications, case studies, knowledge management, research and development, text labeling, video annotation, urban traffic analysis, public safety, prototyping, Google Cloud Platform
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