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A Tutorial on How to Construct and Improve Automatic Pronunciation Proficiency Evaluation System —— take PSC test as an example

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In this talk, taking PSC(Putonghua Shuiping Ceshi) test as an example, the speakers demonstrate how to construct an automatic pronunciation proficiency evaluation system and particularize some of our significant research achievements in the past 6 years. First, they introduce the goal, task and value of proficiency evaluation system. After a brief demonstration of how to develop a straight-forward solution based on automatic speech recognition technology, they point out the major problems or challenges they found in this baseline solution after a detail analysis of the particularity of proficiency evaluation task beyond its based speech recognition technology. Then the speakers introduce in detail their several research achievements orienting these challenges, which include text-dependent mispronunciation prior probability estimation, selective acoustic model adaptation, pronunciation space modeling, tone modeling, and support vector machine based mispronunciation detection etc. Final, the whole workflow and performance of their Mandarin pronunciation evaluation system for Chinese official PSC test is demonstrated, followed by a short discussion on the remained problems and future work in proficiency evaluation research.