



Addressing Workflow Pain Points in Radiology with AutoHotkey: Leveraging ChatGPT for Macro and Hotkey Creation

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Background/Problem Being Solved

Radiologists frequently encounter workflow inefficiencies that disrupt productivity and increase cognitive load. Simple tasks, such as switching between systems or accessing frequently used resources, are common sources of frustration. Automation tools like AutoHotkey (AHK) offer a practical means of mitigating these inefficiencies, especially when paired with AI coding assistants like ChatGPT.

Intervention(s)

This project explored how ChatGPT can assist radiologists in creating customized AHK scripts to streamline common tasks. These scripts provided functionality such as:

1. Task Switching: Rapid toggling between PACS, dictation software, web browsers, and paging systems using customizable hotkeys.
2. Quick Access Tools: One-step launching of frequently used websites such as Radiopaedia, UpToDate, and StatDx for on-demand references.
3. Menu Creation: Custom radial or dropdown menus for launching multiple tools in one interface.

Barriers/Challenges

Technical Barriers: Syntax or Coding Limitations.

1. ChatGPT may sometimes generate AHK code with minor syntax errors or inefficiencies. Users with limited coding experience might struggle to troubleshoot or debug scripts.

Practical Barriers: IT Restrictions.

1. Hospitals and health systems often have strict IT policies that prohibit the use of third-party scripts, macros, or automation tools like AutoHotkey.
2. Running AHK scripts may trigger antivirus software or be flagged as a security risk, requiring administrative permissions.

Outcome

ChatGPT served as a coding partner to create AHK scripts tailored to individual radiologist workflows. By providing natural language instructions to ChatGPT, users could generate scripts without requiring advanced programming knowledge.

These scripts were tested in real-world radiology environments.

The integration of AHK scripting supported by ChatGPT demonstrated clear benefits, including:

1. Faster task switching.

2. Reduced cognitive disruptions during image interpretation.
3. Improved access to clinical resources and tools.

This approach highlighted the potential of AI tools to simplify workflows, reduce cognitive burden, and improve efficiency in practice.

Conclusion/Statement of Impact/Lessons Learned

The success of ChatGPT-enabled AHK scripting reflects broader efforts to integrate ergonomic and customizable tools into radiology. Building on strategies outlined by McGrath et al. (2022) and Grigorian et al. (2023), this work highlights the value of technology in improving productivity and reducing cognitive load. By automating repetitive tasks and streamlining access to resources, radiologists can better navigate today's increasingly complex clinical environments.

Keywords

Applications; Artificial Intelligence/Machine Learning; Clinical Workflow & Productivity; Educational Systems; Enterprise Imaging; Provider Experience