Design of a Python-Based GUI for Service Class Provider (SCP) Configuration Management with Assistance from ChatGPT

Jean Rendon, Clariandys Rivera, Andrea Luces, and Leobardo Valera

This project presents the design and implementation of a graphical user interface (GUI) for managing SCP (Service Class Provider) configuration parameters, including AE Title, IP address, and port number, using Python's tkinter and configparser modules. The primary goal was to simplify the process of reading and editing configuration files related to DICOM communication systems.

A distinctive aspect of this work is the intentional and transparent use of ChatGPT, a large language model developed by OpenAI, to assist in the development process. ChatGPT contributed to the creation of both the backend configuration parser and the front-end interface logic. Its assistance proved particularly valuable for handling edge cases, refining the GUI layout, and ensuring variable consistency throughout the application.

Rather than hiding the use of AI tools, this project promotes responsible integration of AI assistance in software development. It demonstrates how generative AI can be used ethically and effectively as a learning and productivity tool, especially when tackling technically complex tasks such as interface design, configuration management, and file parsing.

The resulting application is a lightweight, reusable, and human-readable interface for SCP configuration tasks, suitable for teaching, research, or deployment in healthcare-related DICOM systems.

By the way, this abstract was also created with ChatGPT.

Jean Rendon, Andrea Luces
Desert Image, 122 W. Castellano Drive, El Paso, TX 79912, e-mail: jeanrendon@gmail.com

Clariandys Rivera
Instituto de Estudios Superiores de Administración (IESA), Caracas 1011, Venezuela, e-mail: clariandys.rivera@iesa.edu.ve

Leobardo Valera
Deparment of Mathematics and Statistics, Dona Ana Community College, New Mexico State University, Las Cruces, NM 88003, USA, e-mail: lvalera@nmsu.com