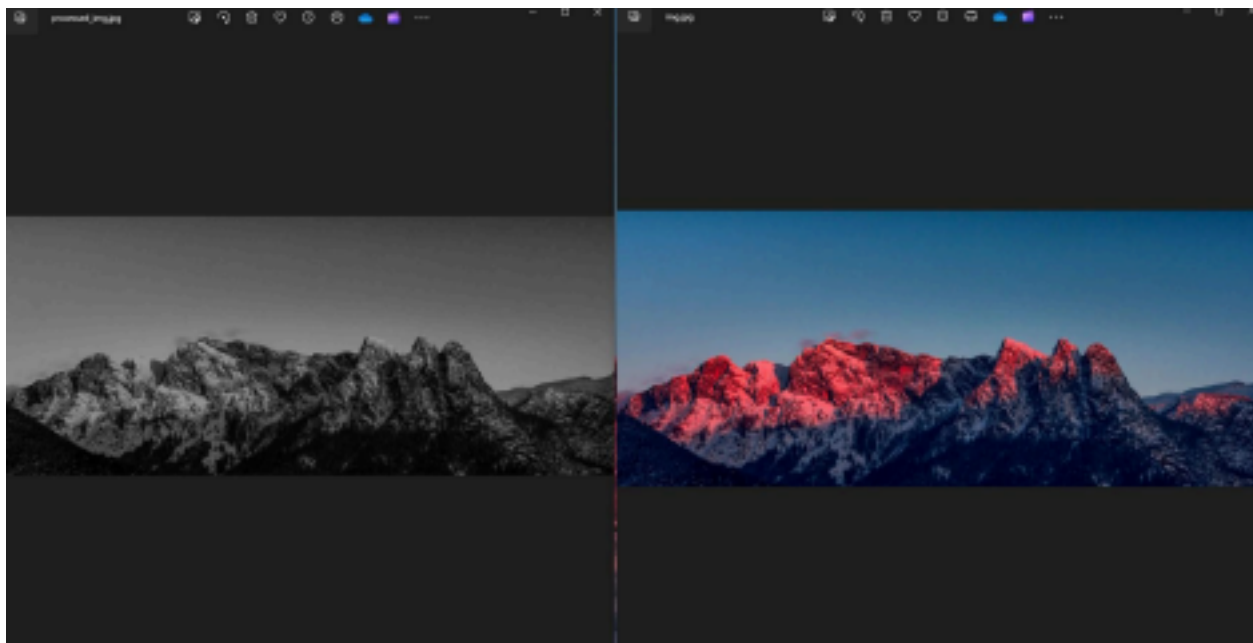Veleanu Bianca-Mihaela CR3.3B

=*APD-Image Processing*=

Utilizând limbajul de programare C++ și mediul de dezvoltare Visual Studio, proiectul își propune sa permita redimensionarea imaginilor, dar si aplicarea unei modificari asupra culorilor, obtinandu-se o imagine in nuante de gri si negru.

Folosirea bibliotecii OpenCV în proiectul meu de prelucrare a imaginilor a adus numeroase beneficii. Prin intermediul OpenCV, am putut implementa rapid și eficient operațiuni precum redimensionarea și corectarea culorii, având acces la o gamă largă de funcții și algoritmi optimizați pentru manipularea eficientă a imaginilor.

Masina pe care am rulat este un PC cu urmatoarele componente:
- Procesorul Intel Core i7-10700F oferă performanțe puternice pentru calcul intensiv și gaming, cu 8 nuclee și 16 fire, o frecvență de bază de 2.9 GHz și o frecvență turbo maximă de 4.8 GHz.
- 16 GB RAM
  - Placa grafică Radeon RX550 oferă capacități de gaming și de redare a conținutului media la o rezoluție mai mică, cu 2GB de memorie GDDR5 și suport pentru tehnologii moderne, cum ar fi DirectX 12 și AMD FreeSync.

Rezultate experimentale:

C:\Windows\System32\cmd.exe

```
Microsoft Windows [Version 10.0.19045.4291]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Bianca\Desktop\APD\ConsoleApplication2\x64\Debug>mpiexec -n 2 consoleapplication2
Process 0 executed in 0.0248345 seconds.
Process 1 executed in 0.0248027 seconds.

C:\Users\Bianca\Desktop\APD\ConsoleApplication2\x64\Debug>
```

```
C:\Users\Bianca\Desktop\APD\ConsoleApplication2\x64\Debug>mpiexec -n 4 consoleapplication2
Process 2 executed in 0.0123282 seconds.
Process 3 executed in 0.0123329 seconds.
Process 0 executed in 0.0123567 seconds.
Process 1 executed in 0.0123044 seconds.

C:\Users\Bianca\Desktop\APD\ConsoleApplication2\x64\Debug>
```

```
C:\Users\Bianca\Desktop\APD\ConsoleApplication2\x64\Debug>mpiexec -n 8 consoleapplication2
Process 3 executed in 0.0061799 seconds.
Process 0 executed in 0.0061973 seconds.
Process 6 executed in 0.0061659 seconds.
Process 2 executed in 0.0061634 seconds.
Process 1 executed in 0.0061786 seconds.
Process 5 executed in 0.0061479 seconds.
Process 4 executed in 0.0061949 seconds.
Process 7 executed in 0.0061826 seconds.

C:\Users\Bianca\Desktop\APD\ConsoleApplication2\x64\Debug>
```

```
Microsoft Windows [Version 10.0.19045.4291]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Bianca\Desktop\APD\ConsoleApplication2\x64\Debug>mpiexec -n 40 consoleapplication2
Process 16 executed in 0.0114215 seconds.
Process 24 executed in 0.0114224 seconds.
Process 20 executed in 0.0114219 seconds.
Process 0 executed in 0.0114165 seconds.
Process 28 executed in 0.0111765 seconds.
Process 12 executed in 0.0111727 seconds.
Process 32 executed in 0.0114204 seconds.
Process 36 executed in 0.0111763 seconds.
Process 4 executed in 0.0111719 seconds.
Process 8 executed in 0.0114156 seconds.
Process 14 executed in 0.0094579 seconds.
Process 11 executed in 0.0079215 seconds.
Process 18 executed in 0.0081871 seconds.
Process 22 executed in 0.0112902 seconds.
Process 15 executed in 0.0113865 seconds.
Process 13 executed in 0.0142738 seconds.
Process 33 executed in 0.0120265 seconds.
Process 25 executed in 0.0154912 seconds.
Process 17 executed in 0.0117494 seconds.
Process 3 executed in 0.0114572 seconds.
Process 19 executed in 0.0117019 seconds.
Process 10 executed in 0.0075728 seconds.
Process 26 executed in 0.0124294 seconds.
Process 6 executed in 0.0102072 seconds.
Process 38 executed in 0.0145232 seconds.
Process 21 executed in 0.0161883 seconds.
Process 5 executed in 0.0163451 seconds.
Process 27 executed in 0.0137546 seconds.
Process 35 executed in 0.0155958 seconds.
Process 31 executed in 0.0190565 seconds.
Process 7 executed in 0.0133267 seconds.
Process 39 executed in 0.0159171 seconds.
Process 2 executed in 0.0147605 seconds.
Process 9 executed in 0.0134254 seconds.
Process 37 executed in 0.0154185 seconds.
Process 30 executed in 0.0155416 seconds.
Process 34 executed in 0.0165101 seconds.
Process 23 executed in 0.0193464 seconds.
Process 1 executed in 0.0172997 seconds.
Process 29 executed in 0.022418 seconds.

C:\Users\Bianca\Desktop\APD\ConsoleApplication2\x64\Debug>
```