

Interactive RGB+NIR Photo Editing

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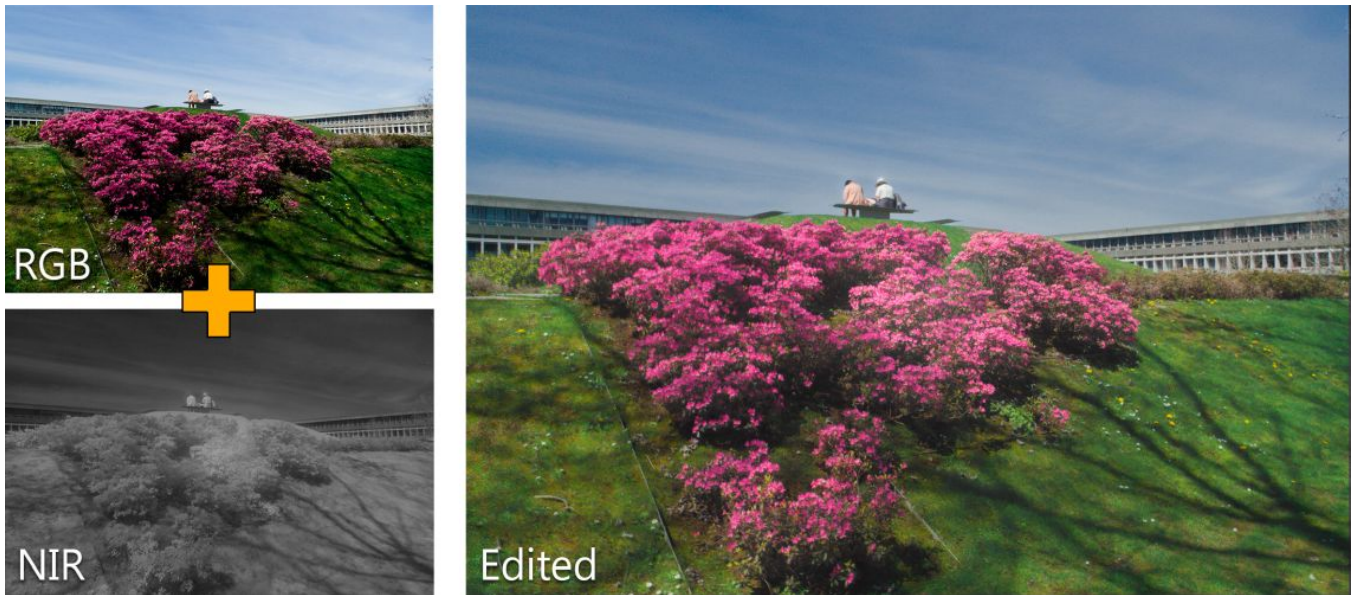


Figure 1: Our application allows users to combine RGB and NIR images for flexible image editing and enhancement.

CCS CONCEPTS

• **Computing methodologies** → **Computational photography.**

KEYWORDS

near infrared, NIR, image editing

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1 INTRODUCTION

Near-infrared imagery offers great possibilities for creative image editing. Lying outside the visual spectrum, the NIR information

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can effectively serve as a fourth color channel to common RGB. Compared to the latter, it shows interesting and complementary behavior: its intensity strongly varies with the surface materials in the scene and is less affected by atmospheric perturbations. For these reasons, NIR imaging has been a long-standing topic of interest in research and its integration has been proven successful for applications like false coloring [Fredembach and Süsstrunk 2008], contrast enhancement [Vollmer and Shaw 2022], image dehazing [Dümbgen et al. 2018], and purification of low-light images [Wan et al. 2023]. Recent developments in smartphone technology [Sharma et al. 2023] have simplified the capturing process, making NIR data readily available for broader use outside the research community. At the same time, existing tools for NIR processing and manipulation are rare and still limited in functionality. With many solutions lacking specialized features, the editing process is inefficient and cumbersome, making them prone to generate suboptimal results. To tackle this issue, we introduce a simple and intuitive photo editing tool that combines RGB and NIR properties, offering functions tailored specifically for the RGB+NIR combination, and granting the user the ability to edit and refine images more creatively.

2 EDITING PHOTOS WITH RGB + NIR

We present an interactive web-based interface that allows users to upload pairs of RGB and NIR images for editing. Users can apply

