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Vlad Atanasiu & Isabelle Marthot-Santaniello, Personalizing image enhancement for critical visual tasks: improved legibility of papyri using color processing and visual illusions.

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1. Introduction: 1.1. Objectives; - 1.2. Relevance; - 1.3. Contributions; - 1.4. Methodology; - 1.5. Applications; - 1.6. Organization. - 2. Problematic: 2.1. Relevance; - 2.2. Data; - 2.3. Task; - 2.4. Strategies; - 2.5. Duration. - 3. Related work: 3.1. Papyrological practice; - 3.2. Computer science research. - 4. Methods: 4.1. Justification; - 4.2. Chroma contrasting by gamut expansion; - 4.3. Lightness contrasting by stretching; - 4.4. Lightness contrasting by negative polarity; - 4.5. Selective contrasting by vividness colorization; - 4.6. Background attenuation by difference of saturation and value; - 4.7. Hue contrasting by hue shift; - 4.8. Dynamic range increase with CIELAB retinex; - 4.9. Cross-spectral colorization; - 4.10. Method integration. - 5. Experiment: 5.1. Objectives; - 5.2. Participants; - 5.3. Stimuli; - 5.4. Algorithms; - 5.5. Procedure; - 5.6. Setting; - 5.7. Frame. - 6. Results: 6.1. How good are the proposed methods?; - 6.2. How do the methods differ?; - 6.3. Which methods should be implemented in software?; - 6.4. Are the evaluated methods sufficient?; - 6.5. Enhancement methods are complementary and their utility is context-dependent; - 6.6. From facts to action: an operationalization pattern; - 6.7. Approaching legibility enhancement as a system; - 6.8. Contextual system optimization is preferable; - 6.9. The primacy of the "original" image; - 6.10. The unexpected usefulness of negative images; - 6.11. Smooth human–computer interaction is critical; - 6.12. Gender may affect legibility enhancement. - 7. Paradigm: 7.1. Requirements; - 7.2. Examples; - 7.3. Rationale; - 7.4. Conceptualization; - 7.5. Operationalization; - 7.6. Frameworks; - 7.7. Criteria. - 8. Implementation. - 9. Conclusions.

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