EE551 – Embedded Image Processing

Module Overview

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Semester II 2023

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Delivery

- Lectures: Tuesday, 15.00-18.00
- Typical Delivery
  - 1-1.5 hours lecture (with break!)
  - Remaining time tutorials, assignment work etc
- Guest lectures also planned…
- Notes, assignments etc will be shared via blackboard

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Delivery

- Module will be taught through Python
- Lecture material and assignments will be done through Jupyter Notebooks
- Github repo and Binder will also be provided
- Recommended texts
  - Digital Image Processing, Gonzales & Woods
  - Hands-On Image Processing with Python, Sandipan Dey
  - Misc online resources

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Assessment

- Continuous assessment & project only (no written final exam)
- 5 continuous assessment assignments (10% each)
- 1 mini-project, 50%
  - Project will be done individually (not a group project)

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Learning Outcomes

1. Describe a digital image in terms of the image parameters, and colour space.
2. Perform low-level (pixel-level) operations for image processing functions.
3. Apply spatial filters to images for sharpening, noise removal etc.
4. Describe and apply frequency domain filtering techniques to digital images.
5. Apply morphological image processing functions to images.
6. Develop and apply feature detection algorithms to digital images.
7. Apply segmentation algorithms to digital images.

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Useful links

- GitHub for Notebooks, additional repo for notes
  - https://github.com/briandeegan82/EE551

- Binder for class
  - https://mybinder.org/v2/gh/briandeegan82/EE551/HEAD

Questions?