



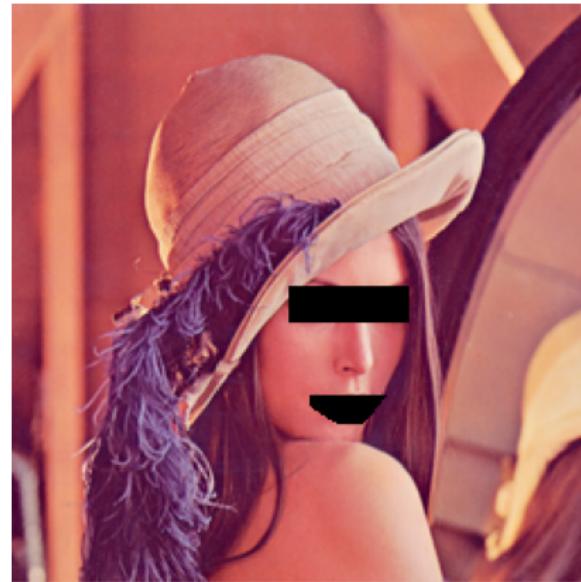
# Master in Computer Vision *Barcelona*

**Module:** Optimization and Inference Techniques in CV  
**Project:** Poisson Editing  
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# Goal

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To inpaint an area using seamless cloning.



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# Deliverable: Mandatory

Mandatory means if there any point that it is not done, then the weekly task will FAIL. Implement the **importing gradients** method from the Patrick's paper.

- ▶ Read the Patrick Perez's paper.
- ▶ Complete start.m file
- ▶ Modify the G???\_Laplace\_Equation\_Axb.m file and create a G???\_Poisson\_Equation\_Axb.m adding **ONLY 4 lines**. 3 of this 4 lines should be

```
if (isfield(param, 'driving'))  
else  
end
```
- ▶ Test with your own images.

The objective is that if param.driving exists, do the Poisson editing, and if it doesn't, do the Inpainting by Laplace's equation.

**Deliverable of mandatory. Thu. Oct. 26. 18h**

WARNING: Be careful with the sign on the discretization of the Laplacian operator!!!!!!

# Deliverable: Optional

1. Test with your own real images. Each successfully edited image will sum up 0.1 points.
2. +1 Points: Implement Seamless cloning with mixing gradients.
3. Try different numerical schemes
  - 3.1 +5 points: Gradient Descent and compare it with cyclic schemes for evolution PDEs
  - 3.2 +5 points: Gauss-Seidel and  $\omega$ -relaxation and compare them with cyclic schemes for stationary PDEs
  - 3.3 +10 points: Multigrid.
4. Feel free to experiment.