

Déroulement sur 3 mois

Un projet par personne (2/3 de la note)

Faire son choix pour la 3ème séance (max 2 projets identiques)

3 types de projets:

- Choisir dans la liste ci-après
- Proposez un de vos propres projets
- Reprendre un projet de l'année passée, l'étendre et poussez la recherche

Intéragir et discutez pendant les TDs

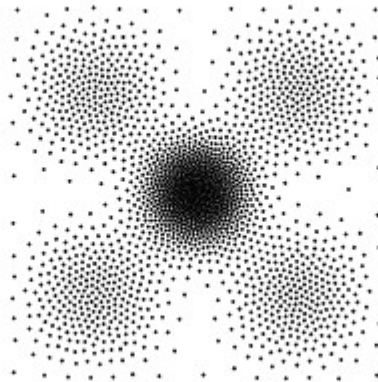
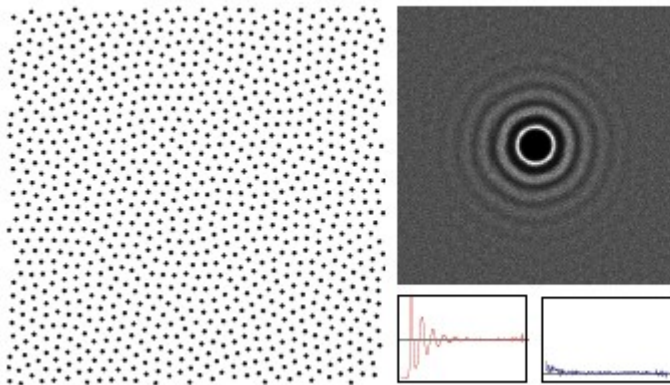
Soutenance a la mi-décembre 2009

Rapport 2-8 pages en anglais (LaTeX LNCS)

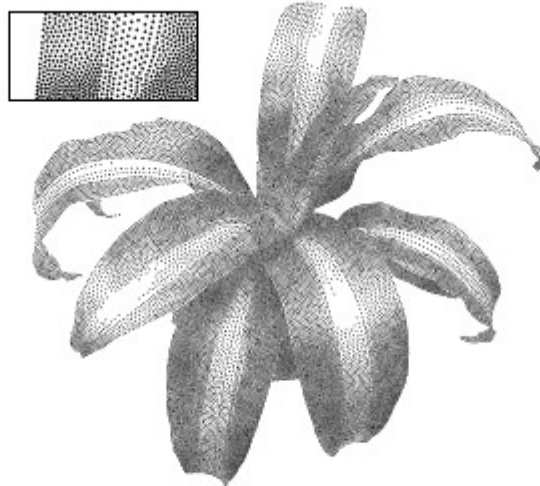
Java application et enrobage Java Web Start (JNLP)

P1. Image/Video B&W/color stappling

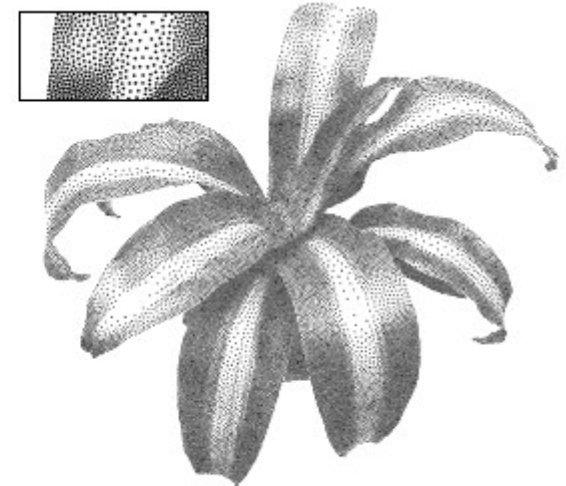
Prototype pour des images et vidéos



(a) original grayscale image



(b) result by Secord [2002]



(c) our result

Capacity-Constrained Point Distributions: A Variant of Lloyd's Method

Encode un film, rejoue un film

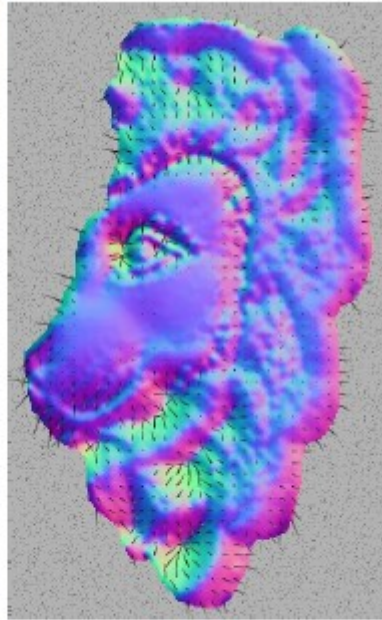
<http://nancyjanuzzi.com/>

<http://ccvt.googlecode.com.>

P2. TextureShop



(a)



(b)



(c)



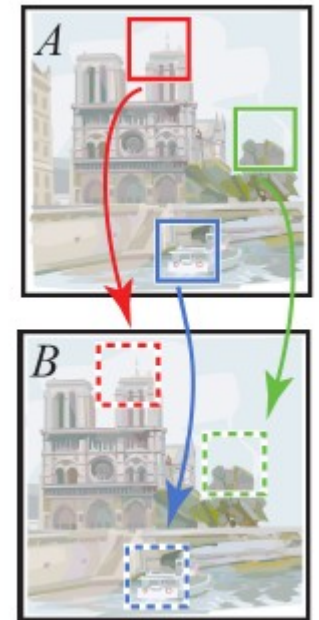
(d)



(e)

Fang, H. and Hart, J. C. 2004. Textureshop: texture synthesis as a photograph editing tool. In *ACM SIGGRAPH 2004 Papers* (Los Angeles, California, August 08 - 12, 2004). J. Marks, Ed. SIGGRAPH '04. ACM, New York, NY, 354-359.

P3. Structural Image Editing



PatchMatch: A Randomized Correspondence Algorithm for Structural Image Editing, Siggraph 2009

http://www.cs.princeton.edu/gfx/pubs/Barnes_2009_PAR/index.php

P4. Visual summary of image collections



Autocollage



<http://www.wordle.net/>

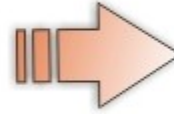
Visual summary of image collections

Flickr, web interface (WEB MODEX)

P5. Single Image Dehazing



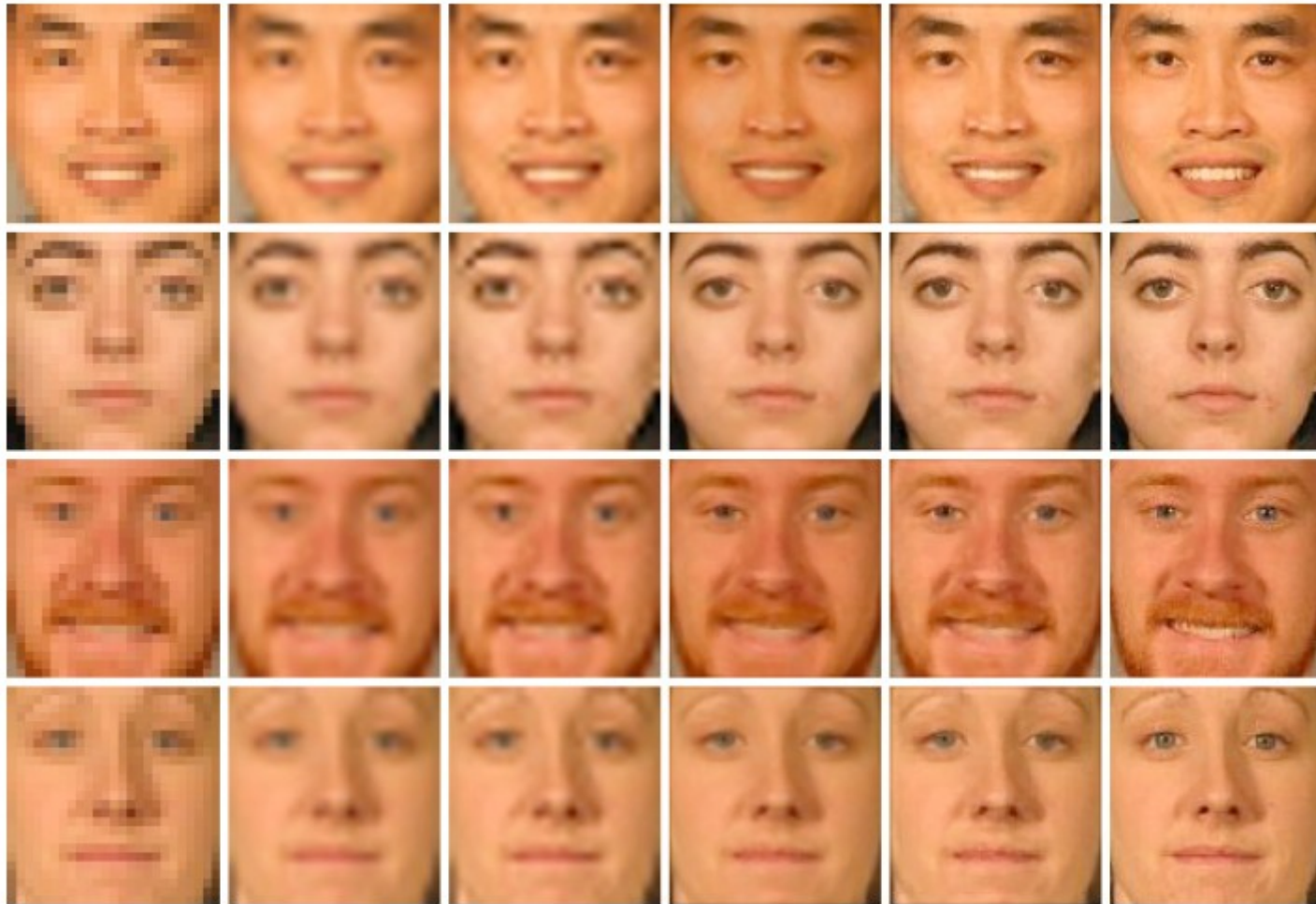
P6. Image Deblurring



Shan, Q., Jia, J., and Agarwala, A. 2008. High-quality motion deblurring from a single image. In *ACM SIGGRAPH 2008 Papers* (Los Angeles, California, August 15, 2008). SIGGRAPH '08. ACM, New York, NY, 1-10. DOI= <http://doi.acm.org/10.1145/1399504.1360672>

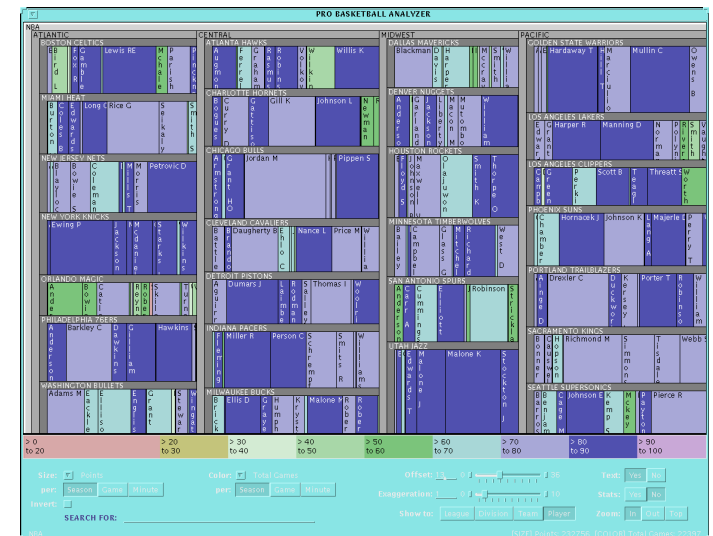
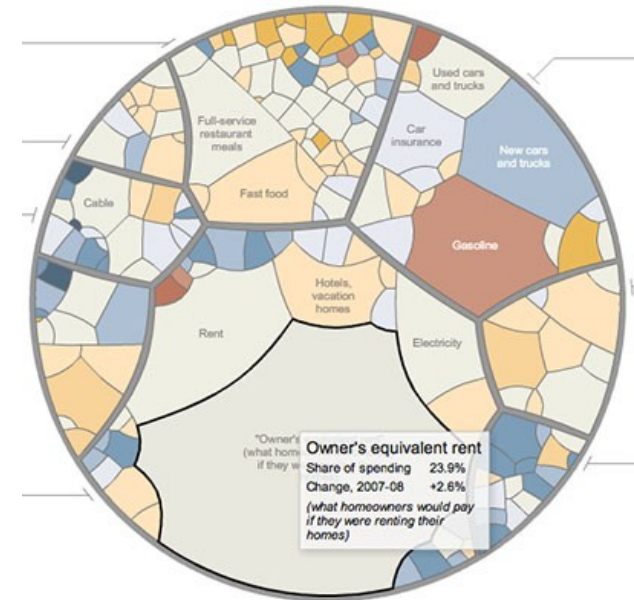
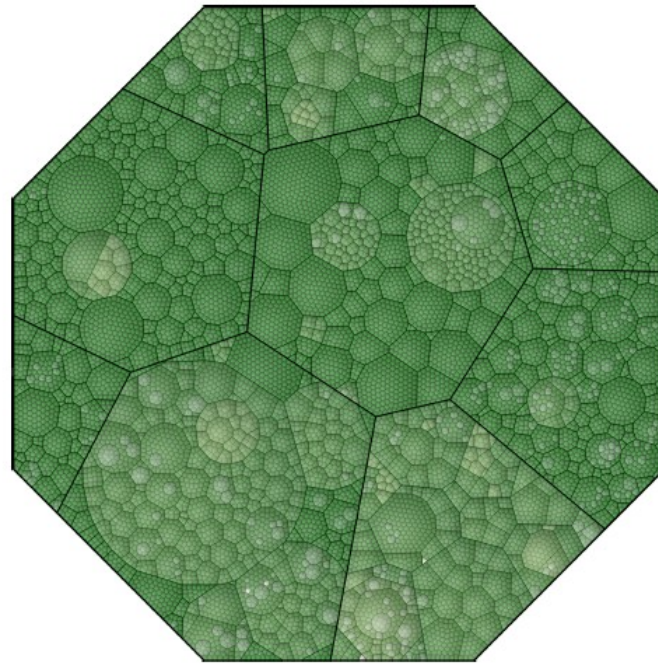
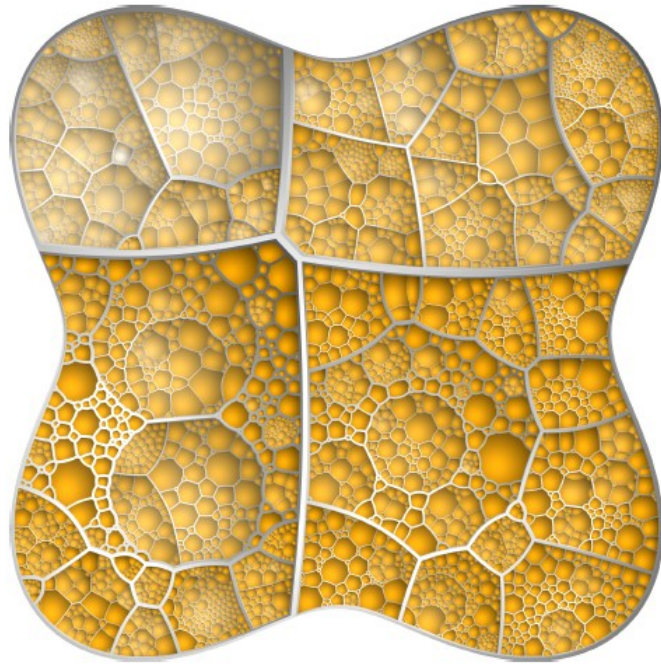
http://www.cse.cuhk.edu.hk/~leo/jia/projects/motion_deblurring/index.htm

P7. Face hallucination/sparse coding

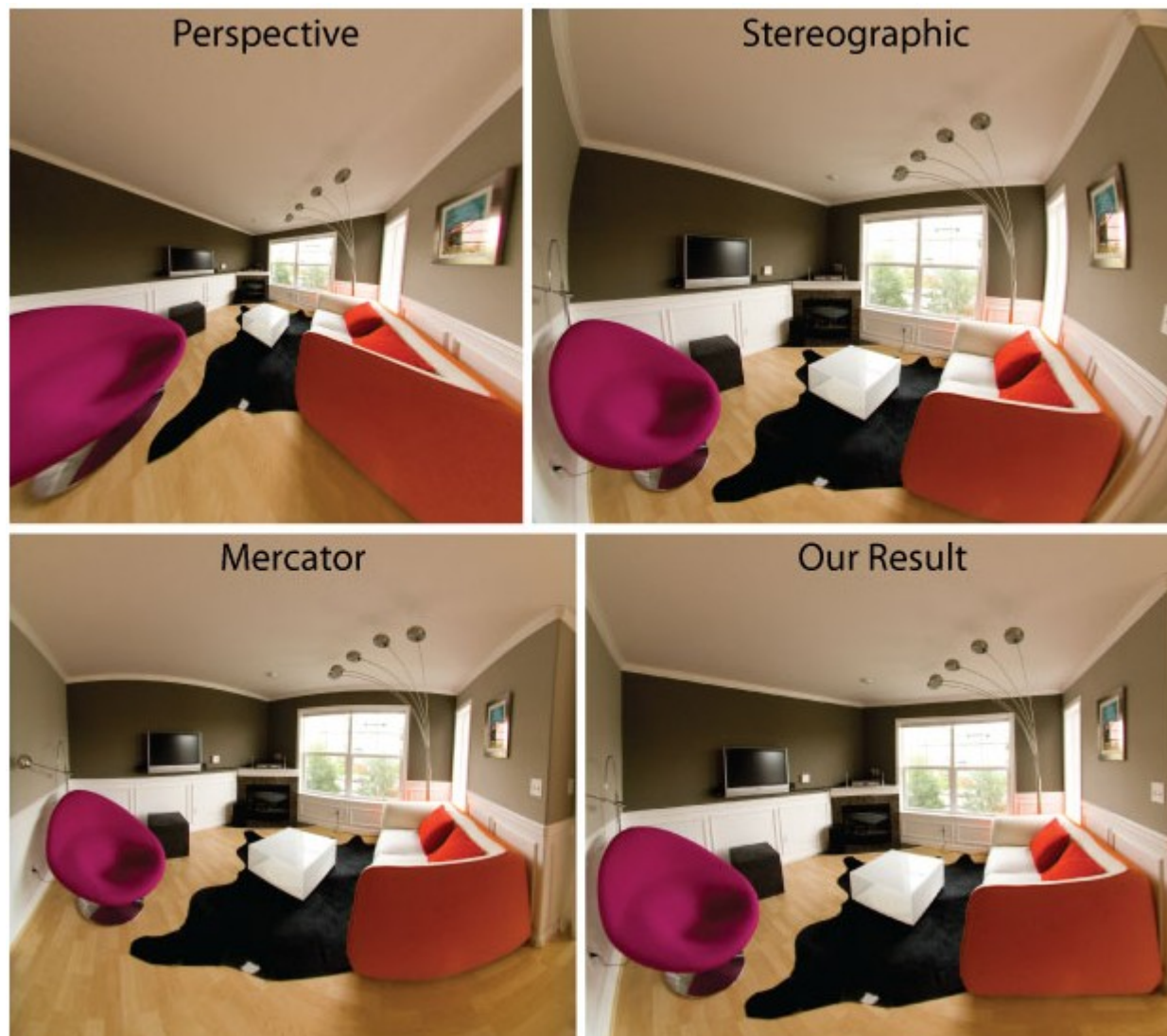


FACE HALLUCINATION VIA SPARSE CODING, ICIP 2008

P8. Voronoi treemaps with applications



P9. Content-Preserving Projections



Research link with:
Seam carving

Wide-angle photographs can appear badly distorted under existing projections, such as the perspective, Mercator and stereographic projections. Perspective projection preserves linear structures in the scene, but distorts shapes of objects. Mercator and stereographic projections preserve shapes locally, but bend linear structures. Our projection is designed to both preserve local shape and maintain straight scene lines that are marked by the user with our interactive tool.

<http://vis.berkeley.edu/papers/capp/>

P10. High-dimensional filtering

Gaussian KD-Trees for Fast High-Dimensional Filtering



Removing noise without smoothing...

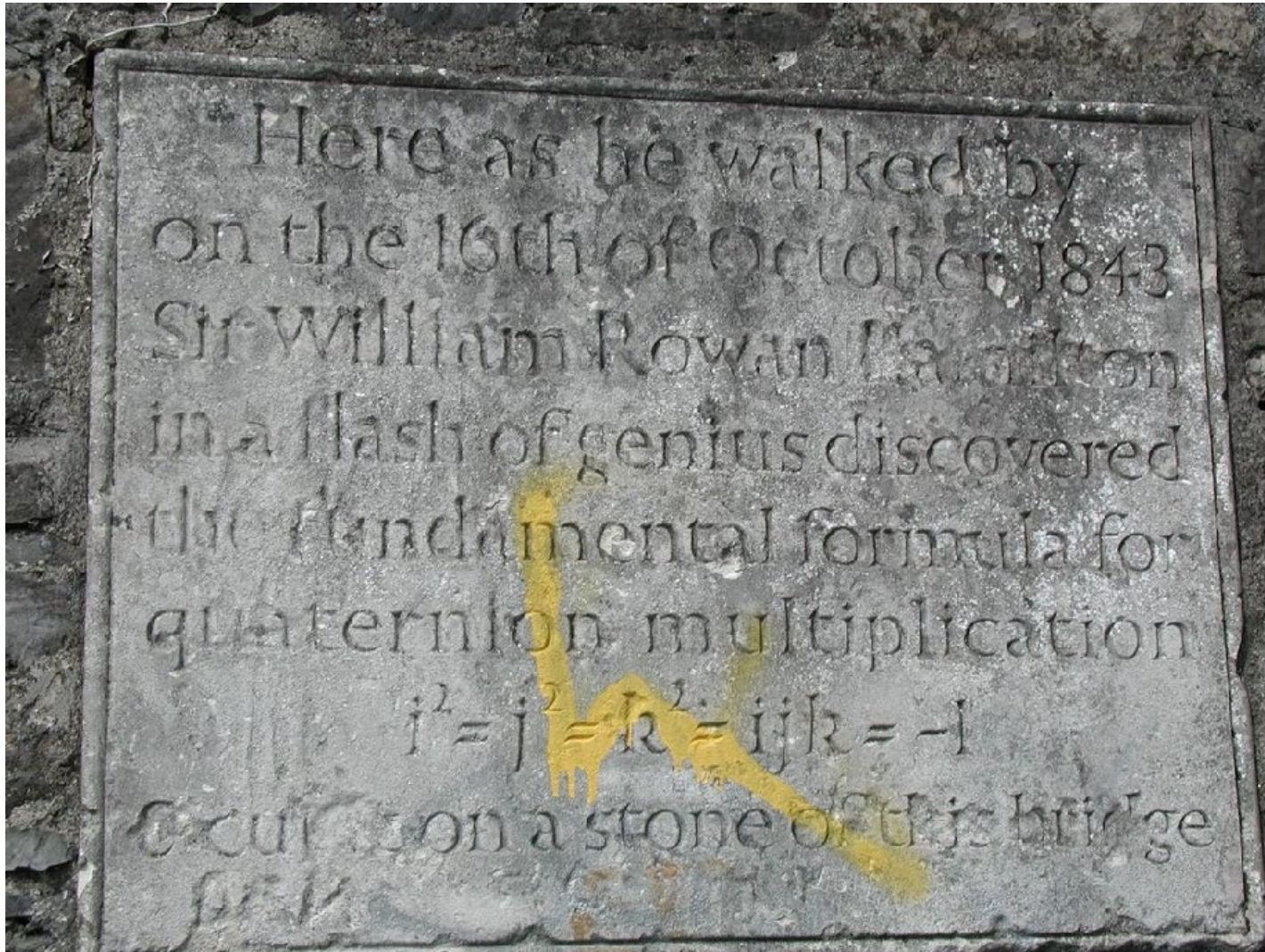
We use a Monte-Carlo sampled kd-tree we call the *Gaussian kd-tree* for various filtering tasks. Our method applies to bilateral filtering of image (left), non-local means of bursts of images (middle), and denoising geometry (right).

<http://graphics.stanford.edu/papers/kdtrees/>

P11-Idea. Graffiti detection

Digitally removing graffiti: Digital restorations, virtual graffiti (or conversely, adding graffiti arts)

Poisson image editing, etc.



P12-Idea. Rainbow detection

Detect rainbow automatically in images

Create a database

Cluster and classify various rainbows

Remove rainbows/add from rainbow clipart collection



Hough transform



Full circles (sun dogs)

Full double

