

# Laurent Najman

Professor  
Université Gustave Eiffel

LIGM – UMR 8049

✉ [laurent.najman@esiee.fr](mailto:laurent.najman@esiee.fr)

🌐 [www.laurentnajman.org](http://www.laurentnajman.org)

68/4192

🆔 0000-0002-6190-0235

🔗 j-2\_cT0AAAAJ

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*Discrete mathematics, with applications to data science,  
biomedical imaging, computer vision and image processing*

## Education

- 2006 **Accreditation to supervise research (HdR)**, *Computer Sciences*, Univ. Marne-la-Vallée  
*Mathematical Morphology, dynamical systems and application to image processing.*
- 1994 **PhD**, *Applied Mathematics*, Université Paris Dauphine  
*Mathematical Morphology : From Images segmentation to Set-Valued Analysis.*  
Received with unanimous jury congratulations.
- 1991 **Master degree**, *Artificial Intelligence and Shape Recognition*, Université Paris-Dauphine  
Summa cum Laude – Ranked first.
- 1991 **Engineering degree**, *Control theory*, École des Mines de Paris  
The École des Mines de Paris is one of the three top French engineering schools.

## Current position

Since 2002 **Professor**, *ESIEE Paris*, Université Gustave Eiffel

## Previous positions

- Summary A mixed, atypical background, with an industrial career marked by patents and awards.
- 2015-2016 **Invited professor**, *GIP Lab.*, Faculty of Computer Sciences – Technion, Israel
- 1998–2002 **Senior Scientist**, *Océ PLT*, Créteil, France  
Within the Océ subsidiary dedicated to large format printing, I was in charge of a small R&D team (5 people) in the field of digital document processing. My missions included on the one hand an aspect of lobbying and negotiations of partnerships between several entities of the Océ group (France, Holland, Germany and USA), and on the other hand an aspect of technology transfer management (relations with universities and engineering schools). Among the results of an academic nature, we mention **three patents and several conference publications.**
- 1995–1998 **VP, Research and Development**, *Animation Science*, Paris - Boston - San Francisco  
In this start-up targeting both the image synthesis and the scientific visualization markets (fluid mechanics, optical simulations), I was a member of the board of directors, and responsible for a team of 12 people. My missions included the negotiation of technical partnerships for amounts of several million dollars (Microsoft/Softimage, AutoDesk/Kinetix, PTC, IBM, Autoliv, ANVAR, CNC...), as well as the development of the particle systems technology at the base of our products. **Numerous awards** have been given to our technology.
- 1991–1995 **Research engineer**, *THALES*, Laboratoire Central de Recherches, France
- 1991–1994 **PhD research grant holder**, *Université Paris-Dauphine*  
During my PhD, while being a research grant holder and having a sustained publication rate in high-level journals, I also worked as a research engineer for Thales, and I was able to contribute to a DGA / DRET project targeting automatic identification of aircrafts in combat position from infrared images, the development of Saphir, a software for digital geography, as well as the development of facial recognition software.

## Books

- 2017 Laurent Najman, Pascal Romon. *Modern Approaches to Discrete Curvature*. Springer International Publishing, 2184, 2017, Lecture Note in Mathematics, 978-3-319-58001-2.
- 2010 Laurent Najman, Hugues Talbot. *Mathematical Morphology : from theory to applications*. ISTE-Wiley, 507 p., 2010, 978-1-84821-215-2 – French version available
- 2006 Bart Lamiroy, Laurent Najman, Hugues Talbot. *Systèmes d'exploitation - Synthèse de cours & exercices corrigés*. Pearson Education France, 254pp., 2006, 978-2-744-07193-5

## Fellowships and awards

**Academy** PhD prizes and Best Paper awards

- 2023 **Outstanding Paper – Honorable Mention**, *ICLR 2023*, for the PhD student [Quentin Garrido](#)
- 2022 **Ian Lawson Van Toch Memorial Award**, *ISMB 2022*, for the master student [Quentin Garrido](#)
- 2013 **Best PhD prize**, *Délégation Générale de l'Armement*, for the PhD student [Camille Couprie](#)
- 2012 **Best interdisciplinary PhD**, *Fondation EADS*, for the PhD student [Camille Couprie](#)
- 2012 **Accessit**, *Gilles Khan prize*, for the PhD student [Camille Couprie](#)
- 2008 **Accessit**, *AFRIF Prize*, for the PhD student [Jean Cousty](#)

**Industry** While VP at Animation Science

- 1997 **European Information Technology Prize**, *European Commission (Esprit programme) and by the European Council for Applied Science and Engineering*
- 1996 **Hottest Products of the Year**, *Computer Graphics World journal*
- 1995 **Technological Enterprise Award**, *Ile-de-France Regional Council*

## Supervision of graduate students

- France **Supervision of 2 "Habilitation à Diriger les Recherches"**, (*French accreditation to supervise research*)
- France **Supervision of 26 PhD students in France**, *6 still in progress*, About 40% of my former PhD students are in academy, and 60% are in the industry, including in companies such as FaceBook or Google
- Abroad **Supervision of 3 PhD students**, *2 in India, 1 in Japan*

## Teaching activities

- Since 2002 **About 300 hours of classes per year**, Various classes at Engineering or Master level, including discrete mathematics, computer sciences (operating systems, compilers, etc.) and signal processing  
I have written several books, that are the basis for some of the courses. In particular, the one on Operating Systems, contains numerous exercises, some theoretical, and some used in practical sessions.

## Organization of scientific meetings

- 2023 **International Conference on Computer Vision**, *Paris, France*, Organisation chair
- 2015 **International Symposium on Mathematical Morphology**, *Reykjavik, Iceland*, Program chair
- 2014 **Discrete Curvature : Theory and Applications**, *Marseille, France*, Program chair
- 2005 **International Symposium on Mathematical Morphology**, *Paris, France*, Program chair
- Since 2005 **Discrete Geometry and Mathematical Morphology**, Member of the steering committee

## Institutional responsibilities

- Since 2022 **Team leader**, *A3SI Team*, LIGM – UMR 8049 – CNRS & Université Gustave Eiffel
- Since 2020 **Elected member**, *Board of directors*, Université Gustave Eiffel
- 2013–2019 **Appointed member**, *Local Scientific Council*, UFR Math–Info, Université Paris-Descartes
- Since 2012 **VP Communication**, *LabEx Bézout*, Programme Investissement d'Avenir, ANR-10-LABX-58
- 2007–2020 **Vice-President**, *Institut Supérieur des Bio-Sciences*, a Bio-Engineering school  
Partnership between Paris-Est Créteil University (Faculty of Medicine) and ESIEE Paris.

## Reviewing activities

- Since 2023 **Editor**, *Journal of Mathematical Imaging and Vision*
- Since 2019 **Editor**, *International Journal of Computer Vision*
- 2016–2022 **Senior Editor**, *Signal Processing Letters*
- 2015–2023 **Area Editor**, *Computer Vision and Image Understanding*

## Memberships of scientific societies

- Since 2020 **Elected member**, *Board of directors*, AFRIF (IAPR France)
- Since 2013 **Senior member**, IEEE Society