

# Amin FEHRI

PhD in Computer Vision

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## EXPERIENCE

2014-2018 **Research Scientist**, *Mines ParisTech*, Paris, France.

PhD in computer vision and pattern recognition. Advisors: Fernand Meyer and Santiago Velasco-Forero.

- Creating new algorithms for unsupervised/semi-supervised hierarchical segmentation, video object segmentation, semantic segmentation; comparing their results with other state-of-the-art approaches.
- Implementing a graph-based hierarchical segmentation module in Smil (mathematical morphology python library).
- Communicating results in international conferences and journals.
- Organizing reading groups and conferences on machine learning topics for researchers or workers from industry.

Technologies and tools: C++, Python, Matlab, Linux, machine learning (CNN - deep learning, SVM), computer vision (keras-Theano/TensorFlow, scikit-learn, scipy, numpy, OpenCV, Smil), mathematical morphology, graph-based approaches.

June-October 2014 **Software Engineer**, *Amadeus IT Group*, Sophia Antipolis, France.

- Working on the pricing part of the tickets search engine.
- Coding of scripts for data handling.

Technologies and tools: C, Perl, Windows.

April-September 2013 **Computer Vision R&D Trainee**, *CEA LIST*, Saclay, France.

Topic: "Objects recognition and localization in images". Grade obtained: Very Good.

- Creating and implementing an original algorithm to recognize and localize objects in images.
- Comparing its results with state-of-the-arts approaches on public databases.

Technologies and tools: C++, Linux, computer vision (OpenCV), machine learning, image/signal processing.

June-September 2012 **Econometrics Trainee**, *French Economic Observatory – Sciences Po Paris*, Sophia Antipolis, France.

Topic: "Heterogeneity in the Euro Effect on Markups: Evidence from French Manufacturing Firms". Grade obtained: Very Good.

- Developing an econometrics model.
- Writing and publishing results in a conference paper.

Technologies and tools: statistics, Stata, LaTeX.

## EDUCATION

2014-2018 **PhD**, *Mines ParisTech*, Paris, France.

PhD in computer vision and pattern recognition.

2012–2013 **Master in Science**, *Université Paul Cézanne (Aix-Marseille III)*, Marseille, France.

Optics, Photonics, Signal and Image, specialty Signal and Image.

2010–2013 **Generalist Engineering School**, *Ecole Centrale Marseille*, Marseille, France.

3rd year courses : Information Science and Technology & Management and Entrepreneurship - GPA: 3.77/4

2007–2010 **Higher School Preparatory Classes**, *Charlemagne*, Paris, France.

Preparatory classes: two-year undergraduate intensive course in mathematics and physics (MPSI-MP).

2004–2007 **High School**, *Louis-le-Grand*, Paris, France.

Secondary School. French Baccalaureate (A-Level/High School Diploma Equivalent) – Maths and Physics option.

## LANGUAGES

French	Native language
English	Fluent, TOEIC score : 940/990
Chinese	Basic communication skills
German	Basic communication skills

## CODING SKILLS

OS	Linux, Mac Os, Windows
Languages	C++, Python, Java, C, SQL, Perl
Softwares	Matlab, Scilab, Stata, LaTeX, Git
Libraries	Keras (TensorFlow/Theano), scikit-learn, scipy, numpy, OpenCV, Smil

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## PUBLICATIONS

A. Fehri. *Image Characterization by Morphological Hierarchical Representations*. PhD thesis, Mines ParisTech, PSL Research University, 2018. Jury: I. Bloch (Professor, Telecom ParisTech), T. Géraud (Professor, EPITA), C. Gomila (CTO and Head of Research and Innovation, Technicolor), H. Sahli (Professor, VUB), F. Meyer (Professor, Mines ParisTech), S. Velasco-Forero (Professor, Mines ParisTech).

A. Fehri, S. Velasco-Forero, and F. Meyer. Characterizing images by the Gromov-Hausdorff distances between derived hierarchies. *2018 IEEE International Conference on Image Processing (ICIP)*, 2018.

A. Fehri, S. Velasco-Forero, and F. Meyer. Prior-based hierarchical segmentation highlighting structures of interest. In *International Symposium on Mathematical Morphology and Its Applications to Signal and Image Processing*, pages 146–158. Springer, 2017.

A. Fehri, S. Velasco-Forero, and F. Meyer. Segmentation hiérarchique faiblement supervisée. *Actes du 26e Colloque GRETSI, Juan-Les-Pins, France.*, 2017.

S. Biasotti and al. Shrec'17 track: Retrieval of surfaces with similar relief patterns. In *10th Eurographics Workshop on 3D Object Retrieval*, 2017.

A. Fehri, S. Velasco-Forero, and F. Meyer. Automatic selection of stochastic watershed hierarchies. In *24th European Signal Processing Conference*, pages 1877–1881. IEEE, 2016.

S. Guillou, L. Nesta, and A. Fehri. Heterogeneity in the euro effects on markups: Evidence from french manufacturing firms. In *Ninth Danish International Economics Workshop, Aarhus, Denmark*, 2013.

I am currently writing several papers with F. Meyer and S. Velasco-Forero.

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## SEMINARS, POSTERS, TALKS

Video Object Segmentation Using Adversarial Networks and Mathematical Morphology. A. Fehri. Poster session of the Data Science Summer School. Palaiseau, France. August 2017.

Deep Learning course, for ADCIS and Evolucare employees. A. Fehri, R. Alais and E. Decencièrre. March 2017.

Semisupervised Video Object Segmentation with CNN and Automatic Selection of Morphological Filters. A. Fehri. Deep Learning Seminar, Mines ParisTech. January 2017.

Deep Learning, an Introduction. A. Fehri, R. Alais and E. Decencièrre. Course, Mines ParisTech. January 2017.

Organizer of the Machine Learning Reading Group for PhD students on the Fontainebleau site of Mines ParisTech. 2016-2017.

Automatic Selection of Stochastic Watershed. French-German Doctoral Workshop. Talk, Kaiserslautern, Germany. November 2016.

Morphological Hierarchies and Recent Applications in Automatic Segmentation. Internal Seminar, Mines ParisTech. March 2016.

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## PERSONAL INTERESTS

Sport Surfing, Basketball (former captain of a Centrale Marseille team: team management, organization of games), Running, Swimming.

Music Piano (for ten years in a National Music Conservatory), Music Theory.