

# Jules Morel

COMPUTER GRAPHIC ENTHUSIAST · RESEARCHER

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## Education

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- 2017 **PhD degree in Computer Science**, Aix Marseille University, France
- 2006 **Engineer degree in Computer Science**, Telecom Physique Strasbourg, France
- 2006 **Master degree in subatomic physics and astroparticules**, Strasbourg University, France

## Skills

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- Programming** C/C++, JAVA, R, Matlab, Python, Node.JS, LaTeX
- Libraries C++** Point Cloud Library, VCG, Eigen, GNU Scientific Library, Boost, Qt
- Web** HTML5, SASS, JavaScript, PHP, MySQL
- Languages** French, English (Full professional proficiency), Spanish and Tamil (Elementary proficiency)

## Experience

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### French National Research Institute for Sustainable Development (IRD)

FREELANCE DEVELOPER

- Development of a progressive web app allowing the identification of mangroves tree species.

Montpellier, France

Jan. 2018 - PRESENT

### Joint Research Unit for Botany and Modeling of Plant Architecture and Vegetation (AMAP)

POSTDOC FELLOW

- Release of the continuous surface models of trees and terrains proposed in the PhD.

Montpellier, France

Mar. 2017 - Dec. 2017

### Laboratory of Systems and Information Science (LSIS), Aix Marseille University

PHD STUDENT UNDER THE FELLOWSHIP OF THE FRENCH INSTITUTE OF PONDICHERRY

- Study of the surface reconstruction problem from scattered and unorganized point clouds captured in forests.
- Development of processing algorithms dedicated to the automatic extraction trees surface model.
- Development of an Android application to visualize in VR point clouds and meshes (LiDAR VR Viewer on Google Play).

Marseille, France

Nov. 2013 - Feb. 2017

### French Institute of Pondicherry (IFP)

R&D ENGINEER

- Application of a rewriting system framework to the modeling of landscapes.
- Development of aerial LiDAR data processing algorithm to automatically extract the terrain model.
- Adaptation of Hough transform approach to detect and model trees in terrestrial LiDAR point clouds.

Pondicherry, India

Jun. 2011 - Jul. 2013

### Project "Composite atomic clock", National Space Study Center (CNES)

R&D ENGINEER, AUSY

- Implementation of the time scale algorithm to combine different atomic clock signals.

Toulouse, France

Sep. 2009 - May. 2011

### Project "ELECTRA", National Space Study Center (CNES)

R&D ENGINEER, ATOS INTEGRATION

- Assesment of the catastrophic risks on the atmospheric re-entry of space junks.

Toulouse, France

Sept. 2007 - Aug. 2009

## List of Publications

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### Digital terrain model construction with compactly supported radial basis

COMPUTER GRAPHICS AND APPLICATIONS, VOLUME 37, PP73-84

J. Morel, A. Bac, C. Vega

2017

### MangrovesID, a computer-aided approach for identification of mangrove species. Case study from Asia and Southeast Asia

IN PREPARATION

Juliana Proserpi, Christophe Proisy, Ariani Andayani, N. Ayyappan, N. Balachandran, D. Balasubramanian, N. Barathan, J. A. Enright, J. Morel, Adewole Olagoke, Frida Sidik, N. Suhardjono, R. Srilatha, Pierre Gard

2017

## International benchmarking of terrestrial laser scanning approaches for forest inventories, part II: Results, Discussion and Outlooks

2017

JOURNAL OF PHOTOGRAMMETRY AND REMOTE SENSING (SUBMITTED)

X. Liang, J. Hyypä, H. Kaartinen, M. Lehtomäki, J. Pyörälä, X. Yu, N. Pfeifer, H. Cristopher, P. Francesco, Br. Gábor, J. Heckenberg, H. Huang, H. Jo, M. Katoh, L. Liu, M. Mokroš, J. Morel, K. Olofsson, J. Poveda-Lopez, J. Trochta, D. Wang, J. Wang, B. Yang, G.. Zheng, Y. Wang

## Poisson surface reconstruction based on compactly supported radial basis functions

2016

COMPUTER GRAPHICS AIDED DESIGN (IN REVIEW)

J. Morel, A. Bac, C. Vega

## Reconstruction of trees with cylindrical quadrics and radial basis functions

2016

PHOTOGRAMMETRIC ENGINEERING AND REMOTE SENSING (IN REVIEW)

J. Morel, A. Bac, C. Vega

## Aboveground biomass estimation of a complex tropical forest in India using LiDAR

2015

REMOTE SENSING, VOLUME 7, PP 10607-10625

C. Vega, U. Vepakomma, J. Morel, J. L. Bader, G. Rajashekar, C. S. Jha, J. Feret, C. Proisy, R. Pelissier, V. K. Dadhwal

## Introducing the vectorial Kappa: An index to quantify congruence between vectorial mosaics

2015

ECOLOGICAL INDICATORS, VOLUME 57, PP 96-99

V. Bonhomme, M. Castets, J. Morel, C. Gaucherel

## PTrees: A point-based approach to forest tree extraction from LiDAR data

2014

INTERNATIONAL JOURNAL OF APPLIED EARTH OBSERVATION AND GEOINFORMATION, VOLUME 33, PP 98-108

C. Vega, A. Hamrouni, S. El Mokhtari, J. Morel, J. Bock, J.-P. Renaud, M. Bouvier, S. Durrieu

## A sequential iterative dual-filter for LiDAR terrain modeling optimized for complex forested environments

2012

COMPUTERS AND GEOSCIENCES, VOLUME 44, PP 31-41

C. Vega, S. Durrieu, J. Morel, T. Allouis

## List of Conferences

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### An Android application to visualize in VR point clouds and meshes

2017

COMPUTER GRAPHICS, VISUALIZATION, COMPUTER VISION AND IMAGE PROCESSING, LISBON, PORTUGAL

J. Morel

### Computation of tree volume from terrestrial LiDAR data

2015

THE 9TH SYMPOSIUM ON MOBILE MAPPING TECHNOLOGY, SYDNEY, AUSTRALIA

J. Morel, A. Bac, C. Vega

### Computation of tree volume from TLS data

2015

SILVILASER, GEOSPATIAL WEEK 2015, LA GRANDE MOTTE, FRANCE

J. Morel, A. Bac, C. Vega

### Forest carbon assessment from LiDAR 3D point cloud analysis

2015

REGIONAL FORUM ON CLIMATE CHANGE, AIT, BANGKOK, THAILAND

J. Morel, A. Bac, C. Vega

## Honors & Awards

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- 2015 **Invited speaker**, Regional forum on climate change, Asian Institute of Technology
- 2016 **Invited speaker**, LiDAR technology and applications workshop, Annamalai University
- 2016 **Invited speaker**, BioAsia workshop, Asian Institute of Technology

*Thailand*

*India*

*Thailand*