

# Jules Morel

COMPUTER GRAPHIC ENTHUSIAST · RESEARCHER

32 boulevard Maréchal Leclerc, 31000 Toulouse, France

☎ (+81) 070-4420-6449 | ✉ jules.morel@ifpindia.org | 🏠 www.julesmorel.com | 🌐 jules-morel-73975a39 | 📧 jules.morel38

## Education

---

- 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

---

- Programming** C/C++, JAVA, R, Matlab, Python, Node.JS, LaTeX
- Librairies C++** Point Cloud Library, VCG, CGAL, VTK, Eigen, GNU Scientific Library, Boost, Qt
- GPGPU** CUDA 10
- Web** HTML5, CSS, JavaScript, MySQL
- Languages** French, English (Full professional proficiency), Spanish, Tamil and Japanese (Elementary proficiency)

## Experience

---

### Kanai laboratory, Graduate School of Arts and Sciences, University of Tokyo

POSTDOCTORAL RESEARCHER

*Tokyo, Japan*

*Nov. 2018 - Present*

- Development of 3D shapes reconstruction techniques specialized in the modeling of trees.

### Carbomap Ltd.

FREELANCE DEVELOPER

*Edinburgh, United Kingdom*

*Feb. 2018 - Jun. 2018*

- Implementation of point cloud processing algorithms using GPGPU.

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

FREELANCE DEVELOPER

*Montpellier, France*

*Dec. 2017 - Feb. 2018*

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

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

POSTDOCTORAL RESEARCHER

*Montpellier, France*

*Mar. 2017 - Dec. 2017*

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

### Laboratory of Informatics and Systems (LIS), Aix Marseille University

PHD STUDENT UNDER THE FELLOWSHIP OF THE FRENCH INSTITUTE OF PONDICHERRY

*Marseille, France*

*Nov. 2013 - Feb. 2017*

- Study of the surface reconstruction problem from scattered and unorganized point clouds captured in forests.

### French Institute of Pondicherry (IFP)

R&D ENGINEER

*Pondicherry, India*

*Jun. 2011 - Jul. 2013*

- 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.

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

R&D ENGINEER, AUSY

*Toulouse, France*

*Sep. 2009 - May. 2011*

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

### Project “ELECTRA”, National Space Study Center (CNES)

R&D ENGINEER, ATOS INTEGRATION

*Toulouse, France*

*Sept. 2007 - Aug. 2009*

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

## List of Publications

---

### Surface reconstruction of incomplete datasets: a novel Poisson surface approach based on CSRBF

*2018*

COMPUTER & GRAPHICS, VOLUME 74, PAGES 44-55

J. Morel, A. Bac, C. Vega

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

2018

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 Grard

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

2017

COMPUTER GRAPHICS AND APPLICATIONS, VOLUME 37, PAGES 73-84

J. Morel, A. Bac, C. Vega

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

2018

JOURNAL OF PHOTOGRAMMETRY AND REMOTE SENSING, VOLUME 144, PAGES 137-179

X. Liang, J. Hyypä, H. Kaartinen, M. Lehtomäki, J. Pyörälä, X. Yu, N. Pfeifer, H. Christopher, 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

## **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**

---

### **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**

---

2015 **Invited speaker**, Regional forum on climate change, Asian Institute of Technology

*Thailand*

2016 **Invited speaker**, LiDAR technology and applications workshop, Annamalai University

*India*

2016 **Invited speaker**, BioAsia workshop, Asian Institute of Technology

*Thailand*