

# Curriculum Vitæ

Dr. François Rameau, Research Professor

KAIST RCVlab

Room 212, N1 building, KAIST Guseong-dong, Yuseong-gu, Daejeon (South Korea)  
mailto:rameau.fr@gmail.com  
+82 10-3355-7120

**Research Interests (Computer vision and Robotics):** Visual-SLAM, augmented reality, global optimization, real-time system, connected vehicle, deep learning.

## Education

2016–present	<b>Research Professor</b> KAIST RCV, South-Korea, KRF fellowship
2014–2015	<b>Post-doctoral researcher</b> KAIST RCV, South-Korea
2011–2014	<b>Doctor of Philosophy</b> advised by Profs. David Fofi and Cédric Demonceaux Université de Bourgogne, Le2i (CNRS), France. Dissertation: <i>Hybrid foveated vision system for video surveillance and robotic navigation</i>
2010–2011	<b>Master 2 - VIBOT</b> advised by Prof. Demonceaux International master of excellence: Erasmus Mundus Université de Bourgogne, Le2i (CNRS), France. Thesis: <i>Visual Tracking Using Catadioptric Sensors</i> .
2009–2010	<b>Master 1 - Electronic and Signal Processing</b> Université de Bourgogne, France
2006–2009	<b>Bachelor of engineering - Electronic and Signal Processing</b> Université de Bourgogne, France

## Awards & Honors

Press	<b>Interviewed by Nature</b> “Naturejobs Career Guide Asia-Pacific 2016, South-Korea”, Mark Zastrow. <b>Reportage by KBS1 news</b> on our connected car project (one of the biggest Korean TV channel). <b>Other medias</b> covering my work: Etnews, Leiphone (Chinese news), local journals (France).
Jan. 2019	<b>IWRCV 2019 Best poster award</b> “Collaborative Localization of a Swarm of Vehicles and Semantic Mapping”
Feb. 2018	<b>IW-FCV2018 Best demo award</b> “Demonstration of Collaborative Localization of a Swarm of Connected Vehicles”
2016 – 20	<b>Korea Research Post-doctoral Fellowship (KRF)</b>
Sep. 2016	<b>ISMAR 2016:</b> Selected among Top10 best paper
2011 – 15	<b>DGA (General Directorate of Armaments - France)</b> Thesis Funding
2010 – 11	<b>Merit based grant</b> dedicated to students in research Master’s degree (Burgundy region)
2009 – 10	<b>French merit-based scholarship</b> (top 10%)
2009 – 10	<b>Ranked 1<sup>st</sup></b> among Master 1 ESP students
2008 – 09	<b>Ranked 2<sup>nd</sup></b> among bachelor ESP students

## Publications

### Book Chapter

[1] **François RAMEAU**, In So KWEON, “Deep-learning based 3D vision”, *Computer Vision: A reference guide*, Katsushi Ikeuchi, Springer, 2019 (under submission).

### International Journal

[1] Uk Cheol SHIN, Jinsun PARK, GyuMin SHIM, **François RAMEAU**, In So KWEON, “Camera Exposure Control for Robust Robot Vision with Noise-Aware Image Quality Assessment”, *IEEE Robotics and Automation Letters (RA-L)*, 2019 (submitted).

[2] **François RAMEAU**, Oleksandr BAILO, JinSun PARK, Kyungdon JOO and In So KWEON, “Real-time localization of a swarm of cars and application to multi-car see-through”, *IEEE Transactions on Intelligent Transportation Systems*, 2019 (submitted).

[3] Tetiana PARSHAKOVA, **François RAMEAU**, In So KWEON and Dae-Shik KIM, “Latent Question Interpretation Through Parameter Adaptation Using Stochastic Neuron”, *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 2018 (under major revision).

[4] Oleksandr BAILO, **François RAMEAU**, Kyungdon JOO, Jinsun PARK, Oleksandr BOGDAN and In So KWEON, “Efficient adaptative non-maximal suppression algorithms for homogeneous spatial keypoint distribution”, *Pattern Recognition Letters (PRL)*, 2018.

[5] **François RAMEAU**, Hyowon HA, Kyungdon JOO, Jinsoo CHOI, Kibaek PARK and In So KWEON, “A Real-time Augmented Reality System to See-Through Cars”, *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, November 2016.

[6] **François RAMEAU**, Désiré SIDIBE, Cédric DEMONCEAUX, David FOFI, “Visual Tracking with Omnidirectional Cameras : An Efficient Approach”, *IET Electronics Letters*, October 2011.

### International Conference

[1] Jinsun PARK, Ukcheol SHIN, Gyumin SHIM, Kyungdon JOO, **François RAMEAU**, Junhyeok KIM, Dong-Geol CHOI, In So KWEON, “Vehicular Multi-Camera Sensor System for Automated Visual Inspection of Electric Power Distribution Equipment”, *International Conference on Intelligent Robots (IROS)*, 2019 (submitted).

[2] Jaesung CHOE, Kyungdon JOO, **François RAMEAU**, In So KWEON, “Segment2Regress: Real-Time Monocular 3D Object Localization in Two Stages”, *Robotics: Science and Systems (RSS)*, 2019 (submitted).

[3] Chaoning ZHANG, **François RAMEAU**, Seokju LEE, Junsik KIM, Philipp BENZ, Dawit MUREJA, Jean-Charles BAZIN, In So KWEON, “RGS-ResNet: Boosting Residual Networks with Nonlinear Shortcut”, *International Conference on Machine Learning (ICML)*, 2019 (submitted).

[4] Oleksandr BOGDAN, Viktor ECKSTEIN, **François RAMEAU**, Jean-Charles BAZIN, “A Deep Learning Approach for Automatic Calibration of Wide Field-of-View Cameras”, *SIGGRAPH European Conference on Visual Media Production (CVMP)*, December 2018.

[5] Oleksandr BOGDAN, Oleg YURCHENKO, Oleksandr BAILO, **François RAMEAU**, Donggeun YOO, In So KWEON, “Intelligent Assistant for People with Low Vision Abilities”, *Pacific Rim Symposium on Image and Video Technology (PSIVT)*, November 2017.

[6] Jae Shin YOON, **François RAMEAU**, Junsik KIM, Seokju LEE, Seunghak SHIN and In So KWEON. “Pixel-Level Matching for Video Object Segmentation using Convolutional Neural Networks” *IEEE International Conference on Computer Vision (ICCV)*, October 2017.

[7] Oleksandr BAILO , Seokju LEE , **François RAMEAU** , Jae Shin YOON , In So KWEON , “Robust Road Marking Detection and Recognition Using Density-Based Grouping and Machine Learning Techniques”, *Winter Conference of Applications on Computer Vision (WACV)*, March 2017.

[8] Sunghoon IM, Hyowon HA, **François RAMEAU**, Hae-Gon JEON, Gyeongmin CHOE and In So KWEON , “All-around Depth from Small Motion with a Spherical Panoramic Camera”, *European Conference on Computer Vision (ECCV)*, Oct 2016

[9] **François RAMEAU**, Hyowon HA, Kyungdon JOO, Jinsoo CHOI, Kibaek PARK and In So KWEON, “A Real-time Augmented Reality System to See-Through Cars”, *IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*, Sep 2016. (*oral, Top 10 paper.*)

[10] Jae Shin YOON, Kibaek PARK, Soonmin HWANG, Namil KIM, Yukyung CHOI, **François RAMEAU** and In So KWEON , “Thermal-Infrared based Drivable Region Detection”, *IEEE Intelligent Vehicles Symposium (IV)*, June 2016.

[11] Hyowon HA, **François RAMEAU**, In So KWEON, “6-DOF Direct Homography Tracking with Extended Kalman Filter”, *Pacific Rim Symposium on Image and Video Technology (PSIVT)*, Auckland (New Zealand), November 2015. (*oral*)

[12] Kibaek PARK, Hyowon HA, **François RAMEAU**, In So KWEON, “Fused robot pose estimation using embedded and external camera”, *Ubiquitous Robots and Ambient Intelligence (URAI)*, October 2015.

[13] **François RAMEAU**, Désiré SIDIBE, Cédric DEMONCEAUX, David FOFI, “Structure from motion using a hybrid stereo-vision system”, 12th international conference on Ubiquitous Robots and Ambient Intelligence (URAI), October 2015. (*oral*)

[14] **François RAMEAU**, Cédric DEMONCEAUX, Désiré SIDIBE, David FOFI, “Control of a PTZ Camera in a Hybrid Vision System”, *Computer Vision Theory and Applications, Lisbon (VISAPP)*, January 2014. (*oral.*)

[15] **François RAMEAU**, Adlane HABED, Cédric DEMONCEAUX, Désiré SIDIBE, David FOFI, “Self-Calibration of PTZ Camera using New LMI Constraints”, *Asian Conference on Computer Vision (ACCV)*, November 2012.

## International Workshop

[1] **François RAMEAU**, Oleksandr BAILO, JinSun PARK, Kyungdon JOO, Jaesung CHOE and In So KWEON. “Collaborative Localization of a swarm of Vehicles and Semantic Mapping” *International Workshop On Robust Computer Vision (IWRCV)*, January 2019. (*Best poster award.*)

**François RAMEAU**, Oleksandr BAILO, JinSun PARK, Kyungdon JOO, Jaesung CHOE and In So KWEON. “Real time Demonstration of Collaborative Localization of a Swarm of Connected Vehicles” *International Workshop on Frontiers of Computer Vision (IW-FCV)*, February 2018. (*Best demo award.*)

[2] Jae Shin YOON, **François RAMEAU**, Junsik KIM, Seokju LEE, Seunghak SHIN and In So KWEON. “Pixel-Level Tracking using Convolutional Neural Networks” *International Workshop On Robust Computer Vision (IWRCV)*, December 2017.

[3] **François RAMEAU**, Hyowon HA, Kyungdon JOO, Jinsoo CHOI and In So KWEON, “See-Through Cameras for connected cars”, *International*

*Workshop On Robust Computer Vision (IWRCV)*, December 2016.

[4] **François RAMEAU**, Hyowon HA, Kyungdon JOO, Jinsoo CHOI and In So KWEON, “A Real-time Vehicular Vision System to Seamlessly See-through Cars”, *ECCV Workshop - Assistive Computer Vision and Robotics (ECCVW)*, Oct 2016.

[5] **François RAMEAU**, Désiré SIDIBE, Cédric DEMONCEAUX, David FOFI, “Tracking Moving Objects With a Catadioptric Sensor Using Particle Filter”, *ICCVW (OMNIVIS’11)*, November 2011.

## National Conference

[1] 주경돈, 하효원, 최진수, **François RAMEAU**, 권인소, “선행차량투시를위한실시간증강현실시스템연구” 2016년도한국멀티미디어학회추계학술발표대회.

[2] **François RAMEAU**, Cédric DEMONCEAUX, Dro Désiré SIDIBE David FOFI, “étude d’un système de stéréo-vision hybride”, *Congrès des jeunes chercheurs en vision par ordinateur (ORASIS)*, France, 2013.

[3] **François RAMEAU**, Dro Désiré SIDIBE, Cédric DEMONCEAUX, David FOFI, “Une approche performante de suivi visuel pour les caméras catadioptriques”, *Reconnaissance des Formes et Intelligence Artificielle (RFIA)*, France, 2012.

## Background

Prog. Lang.	C/C++, Matlab, Python, $\text{\LaTeX}$
Library	OpenCV, ROS, Ceres, G2o, OpenVPN
Deep learning	Pytorch, Keras
Optimization	branch-and-bound, Levenberg-Marquardt, Linear Matrix Inequality (LMI), Groebner Basis.
3D	SLAM, SfM, multi-view geometry, structured-light.
ETC.	Visual tracking, real-time processing, computational geometry, network.

## Project Experience

**Look Ahead by Shared Sensing for Cooperative Cars** 2015 – present  
funded by *Robert Bosch GmbH*

Goal: Developing new technologies toward the collaboration between a swarm of vehicles (navigation, assisted driving, augmented reality and more).

My role: Main scientific contributor, team leader.

Skills: Real-time processing, Network, 3D reconstruction, Image processing, Robotics

Impact: Large media coverage, high potential for commercialization

Partners: Bosch Germany & Bosch China

**SSIM :Semantic & scalable indoor mapping** 2019 – present  
funded by *Naver Labs*

Goal: Exploring deep-learning approaches for Camera pose estimation and mapping.

My role: Co-PI with Prof. Kweon.

Skills: Projective geometry, deep-learning for camera resectioning, minimal solvers (Groebner basis)

Partners: Naver Labs

**Deep-Learning AI based face replacement technology** 2019 – present  
funded by *IITP*

Goal: Development of deep-learning based face replacement for the construction of realistic digital actors in modern film CG/VFX production.

My role: Principal Investigator

Skills: Deep-learning architecture for face alignment

Partners: Institute for Information & Communications Technology Promotion (IITP), Visual Computing Artificial Intelligence Lab (KAIST)

## Academic Activities

- Program committee member: IEEE MIPR 2018.
- Conference Reviewer: IROS, ICRA, IV, CVPR, ICCVW, MIPR, CVPR.
- Journal Reviewer: TPAMI, TIP, RAL, TRO, IET CV.
- Session chair: URAI 2016, IWRCV 2017.
- Student volunteer of ORASIS 2013.
- Summer schools: Computer Vision and Intelligent Computer Systems (COMVICS), Brno (Czech Republic), 2013 and BMVA Summer School, Manchester, 2013.

## Invited Talk

- **IPIU**, Collaborative localization of a swarm of vehicles, Korea, 2019.
- **VIBOT**, Invited seminar for the European Master of excellence ERASMUS+ VIBOT-MAIA, France, 2017.
- **SIGGRAPH-ASIA**, “A Real-time Augmented Reality System to See-Through Cars”, China, 2016.
- **Le2i, CNRS**, “Augmented reality for connected vehicle”, France, 2016.
- **ARRC, KAIST**, “Real-time computer vision and augmented reality”, Korea, 2016.
- **KRF**, Mentoring speech for the new KRF fellows, Korea, 2016.

## Teaching

2019 (fall semester)	<b>Perception for autonomous and connected vehicles</b> , Division of Future Vehicle, <i>KAIST</i> .
2014–2015	<b>Numerical analysis</b> , International bachelor in Computer vision, <i>Université de Bourgogne</i> .
2012–2013	<b>Mathematics</b> , Bachelor GEII <i>IUT Le Creusot</i> . <b>Signal processing</b> , Bachelor MP <i>Université de Bourgogne</i> .
2011–2012	<b>Image Processing</b> Bachelor CIVA, <i>Le Creusot</i> . <b>Software engineering</b> , International Master 1 MsCV/VIBOT <i>Université de Bourgogne</i> .

## Master Supervision

2019–present	<b>Nathan Seutin</b> , “Vehicle simulation platform for smart-city concept”, Co-supervisors: In So Kweon.
2017–2018	<b>Vincent Dusserre</b> , “sub-frame cameras resynchronization and self-calibration using Headpose estimation”, Co-supervisors: JinSun Park, In So Kweon.
2016–2017	<b>Oleksandr Bailo</b> , “Enhancing SLAM with low and high level features”, Co-supervisors: In So Kweon.
2015–2016	<b>Youssef Amelal</b> , “Monocular 3D reconstruction using smartphone”, Co-supervisors: Namil Kim, In So Kweon.
2012–2013	<b>Andru Putra Twinanda</b> , “Control of PTZ camera in a heterogenous vision system”, Co-supervisors: Cédric Demonceaux, Désiré Sidibé.

## Language

- **French**: Native proficiency.
- **English**: Full Professional Proficiency.
- **Korean**: Beginner.
- **Spanish**: Notion.

## Hobbies

- Cinema, Hiking, Traveling, Reading, Cooking, Family time.

## Extracurricular Activities

2011–2015	<b>Scientific popularization</b> , The experimentarium is a unique scientific popularization program in Europe, organizing meetings between researchers (from any field) and kids.
2011–2015	<b>Cultural activities</b> , Supervision of local cultures travels through the master Erasmus mundus Vibot/MsCV (Burgundy).
2013–2015	<b>Associative activities</b> , President of the Vibotians association (association dedicated to the Erasmus mundus program VIBOT students).

## Referee (persons who I may ask reference letters)

**Prof. In So Kweon**, KEPCO chair professor, KAIST, South-Korea  
E-mail: iskweon@kaist.ac.kr

**Prof. Cedric Demonceaux**, Full professor, Director of the research team VIBOT ERL CNRS 6000, Université de Bourgogne, France  
E-mail: cedric.demonceaux@u-bourgogne.fr

**Prof. Jean-Charles Bazin**, Assistant professor, KAIST, South-Korea  
E-mail: jeancharles.bazin@gmail.com

**Prof. David Fofi**, Full professor, Deputy director of the LE2I and coordinator of the “VIBOT”, Université de Bourgogne, France  
E-mail: David.Fofi@u-bourgogne.fr

**Prof. Adlane Habed**, Full professor, ICube-AVR, Strasbourg, France  
E-mail: habed@unistra.fr