VINCENT RABAUD

Education

UNIVERSITY OF CALIFORNIA, SAN DIEGO — San Diego, CA, USA
Ph.D. in Computer Science, 2009
Dissertation:*Manifold Learning Techniques for Non-Rigid Structure from Motion.*
Advisor: Serge Belongie.
Research Interests: Structure from Motion, Multiview Geometry, Panorama, Image Manifold Learning, Tracking, Behavior Analysis, Optimization, Visual Captchas, Perception.

SUPAERO — Toulouse, France
M.S. in Aeronautical and Space Engineering, Space Imagery Major, 2003.

ECOLE POLYTECHNIQUE — Paris, France
B.S./M.S. in Applied Math, Fluid Mechanics and Parallel Computing, 2001.

Work Experience

ALDEBARAN — Paris, France
09/2014–
SW/HW link director

ALDEBARAN — Paris, France
04/2013–09/2013
Perception Team Manager, Object Recognition (2d/3d), Human Interaction.

OPENCV FOUNDATION
06/2012–
Co-Founder and Member of the Board of the official OpenCV foundation.

WILLOW GARAGE — Menlo Park, CA, USA
01/2011–03/2013
Research Engineer, Object Recognition (2d/3d), OpenCV developement and management, SLAM, ROS infrastructure.

VIDEOSURF — San Mateo, CA, USA
03/2009–01/2011
Software Engineer, Face Recognition, Video Summary, Video Pipeline Optimizations.

UNIVERSITY OF CALIFORNIA, SAN DIEGO — La Jolla, CA, USA
01/2004–03/2009
Graduate Student Researcher, Department of Computer Science and Engineering.

CENTER FOR INTERDISCIPLINARY SCIENCE FOR ART, ARCHITECTURE AND ARCHAEOLOGY (CISA3) — La Jolla, CA, USA
06/2007–09/2007
Intern, Painting Panoramas, High Resolution Mosaics.

CALIT2 — La Jolla, CA, USA
06/2005–09/2005
Intern, Visual Crowd Management, *RESCUE* Project.

UNIVERSITY OF CALIFORNIA, SAN DIEGO — La Jolla, CA, USA
05/2003–12/2004
Intern, Animal Behavior Analysis, *Smart Vivarium* Project.

CENTRE NATIONAL D'ETUDES SPATIALES (CNES) — Toulouse, France
06/2002–12/2002

Intern, Space Mechanics Department, French Space Agency.

OFFICE NATIONAL D'ETUDES ET DE RECHERCHES AEROSPATIALES (ONERA) Toulouse, France
03/2002–06/2002
Intern, Flight Mechanics Department.

DYNAFLOW-INC Jessup, MD
04/2001–06/2001
Intern, Fluid Mechanics Modeling.

Teaching Experience

UNIVERSITY OF CALIFORNIA, SAN DIEGO La Jolla, CA, USA
CSE252C, *Object Recognition*, Fall 2007: Teaching Assistant
CSE166, *Image Processing*, Fall 2007: Teaching Assistant

Professional Activities

Co-founder and member of the board of the official OpenCV foundation.

Mentor and organizer of Google Summer of Code for OpenCV from 2011 to 2015.

Maintainer/developer of 60+ packages and involved in the core development of the Robot Operating System (ROS).

Reviewer: IEEE International Conference on Computer Vision, IEEE Conference on Computer Vision and Pattern Recognition, SIGGRAPH, IEEE Transaction on Pattern Analysis and Machine Intelligence, International Journal of Computer Vision

Organizer of Pixel-Cafe, the weekly vision and graphics seminar at UCSD.

IEEE member, 2005-present

Skills

Skills: Vision (SfM, web video analysis, image retrieval, object recognition), Robotics, Programming, Architecture, Management
Programming Languages: C++, Python
Programming Libraries: OpenCV, ROS, Boost, OpenMP, TBB, PVM, MPI
Extra Interests: Android, Drupal, Matlab, Javascript, PHP, MySQL, Fortran
Languages: French (native), English (bilingual), Spanish (fluent), Portuguese (beginner), Italian (beginner)

Software

ROS packages: maintainer/developer of 60+ ROS packages about computer vision, lasers, graph processing, the NAO robot.

Recognition Kitchen: set of tools to develop and execute object recognition.

Surveillance Video Entertainment System, (SVEN): real-time tracking of pedestrians incorporating appearance description, face detection and facial expression analysis.

Painting Panorama: fast and memory efficient panorama software for very high resolution images of paintings. Incorporates sparse bundle adjustment, sift and camera auto calibration.

Vincent's Structure from Motion Toolbox for Matlab: toolbox including many common structure from motion algorithms (e.g. rigid, non-rigid, bundle adjustment, visualization).

Journal Articles

A. Ziegler, E. Christiansen, V. Rabaud, S. Belongie, D. Kriegman, "In submission", *IEEE Transaction on Pattern Analysis and Machine Intelligence* (**PAMI, in preparation**), 2013.

Papers in Reviewed Proceedings

A. Ziegler, E. Christiansen, V. Rabaud, S. Belongie, D. Kriegman, "Match-time covariance for descriptors", **BMVC**, 2013.

S. Leutenegger, P. T. Furgale, V. Rabaud, M. Chli, K. Konolige and R. Siegwart, "Keyframe-Based Visual-Inertial SLAM using Nonlinear Optimization. ", (**RSS**), 2013.

M. Dimashova, I. Lysenkov, V. Rabaud, V. Eruhimov "Tabletop Object Scanning with an RGB-D Sensor" , 3rd Workshop on Semantic Perception, **ICRA**, 2013.

I. Lysenkov, V. Rabaud, "Pose Estimation of Rigid Transparent Objects in Transparent Clutter" , **ICRA**, 2013.

E. Rublee, V. Rabaud, K. Konolige and G. Bradski, "ORB: an efficient alternative to SIFT or SURF" , *IEEE International Conference in Computer Vision*, (**ICCV**), 2011.

V. Rabaud and S. Belongie, "Linear Embeddings in Non-Rigid Structure from Motion" , *IEEE Conference on Computer Vision and Pattern Recognition*, (**CVPR**), 2009.

V. Rabaud and S. Belongie, "Re-Thinking Non-Rigid Structure From Motion" , *IEEE Conference on Computer Vision and Pattern Recognition*, (**CVPR**), 2008.

S. Steinbach, V. Rabaud and S. Belongie, "Soylent Grid: it's made of People !" , *Interactive Computer Vision, in conjunction with ICCV*, (**ICV**), 2007.

P. Dollár, V. Rabaud and S. Belongie', "Non-Isometric Manifold Learning: Analysis and an Algorithm", *International Conference on Machine Learning*, (**ICML**), 2007.

P. Dollár, V. Rabaud and S. Belongie, "Learning to Traverse Image Manifolds" , *Neural Information Processing Systems*, (**NIPS**), 2006.

V. Rabaud and S. Belongie, "Counting Crowded Moving Objects,", *IEEE Conference on Computer Vision and Pattern Recognition*, (**CVPR**), 2006, pp. 705- 711, vol. 1.

P. Dollár, V. Rabaud, G. Cottrell and S. Belongie, "Behavior Recognition via Sparse Spatio-Temporal Features," *Joint International Workshop on Visual Surveillance and Performance Evaluation of Tracking and Surveillance*, (**VS-PETS**), 2005.

S. Belongie, K. Branson, P. Dollár, and V. Rabaud, "Monitoring Animal Behavior in the Smart Vivarium," *International Conference on Methods and Techniques in Behavioral Research*, 2005.

V. Rabaud and S. Belongie, "Big Little Icons," *IEEE Workshop on Computer Vision Applications for the Visually Impaired, in conjunction with CVPR*, (**CVAVI**), 2005.

K. Branson, V. Rabaud and S. Belongie, "Three Brown Mice: See How They Run," *Joint International Workshop on Visual Surveillance and Performance Evaluation of Tracking and Surveillance*, (**VSPETS**), 2003, pp. 78-85.

V. Rabaud and B. Deguine "A Geometrical Approach To Determine Blackout Windows At Launch," AAS/AIAA Space Flight Mechanics Meeting, Ponce, Puerto Rico, (**AAS**), 2003, 03-187

Video

M. Maschion, V. Rabaud and S. Belongie, *Computer Vision: Fact and Fiction*, Instructional DVD, 2005.

References

Prof. Serge Belongie
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Dr. Gary Bradski
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Dr. Kurt Konolige
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Prof. David Kriegman
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