

# Baptiste Brument

3rd Year Ph.D. Student — Computer Vision  
IRIT, University of Toulouse

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## Education

- 2021 – Present **Ph.D. in Computer Vision: Enhancement of Photographic 3D Reconstruction Techniques**, IRIT, University of Toulouse  
Thesis Supervisor: Jean-Denis DUROU / Advisor: Lilian CALVET
- 2020 – 2021 **Master PSMSC - Performance in Software, Multimedia and Scientific Computing**, INP-ENSEEIH, Toulouse
- 2018 – 2021 **Engineering School**, INP-ENSEEIH, Toulouse  
Digital Sciences - Image & Multimedia  
Competence Areas: Computer Vision — Artificial Intelligence — Geometric and Photometric Methods for 3D Reconstruction
- 2016 – 2018 **Preparatory Classes for Grandes Écoles (PCSI-PSI)**, Lycée Joffre, Montpellier
- 2016 **Scientific Baccalaureate**, Lycée Notre-Dame de la Merci, Montpellier

## Professional Experience

- 2021 – Present **Teaching Assistant DCCE**, INP-ENSEEIH, Toulouse  
Courses taught: Computer Architecture (BSc), Data Analysis (BSc), Inverse Problems for 3D (MSc)
- Mar – Sep 2021 **Research Internship**, REVA – IRIT, Toulouse  
End of studies project – B. Brument, L. Calvet, J. Mérou, J-D. Durou. 3D Reconstruction of a Convex Polyhedron from its Silhouettes. ORASIS 2021
- Jun – Jul 2020 **Research Internship**, Lab. of Biometry and Bioinformatics, Department of Agricultural and Environmental Biology, University of Tokyo, Japan  
Deep-learning based imputation of missing data in historical rice breeding database
- Jun – Jul 2019 **Research Internship**, INRA/CIRAD, Montpellier  
Creation of the [openalea.rtf.d.io](https://openalea.rtf.d.io) website containing documentation and interactive tutorials (ReadTheDocs & Jupyter) for the mathematical and computer modeling software OpenAlea
- 2018 **Private Tutor in Physics and Mathematics**, Montpellier

## Publications

- Baptiste Brument, Robin Bruneau, Yvain Quéau, Jean Mérou, François Bernard Lauze, Jean-Denis Durou, Lilian Calvet, "RNb-NeuS: Reflectance and Normal-based Multi-View 3D Reconstruction," *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- Baptiste Brument, Lilian Calvet, Robin Bruneau, Jean Mérou, Simone Gasparini, Yvain Quéau, François Lauze, Jean-Denis Durou, "A shape-from-silhouette method for 3D reconstruction of a convex polyhedron," *Proc. SPIE 12749, Sixteenth International Conference on Quality Control by Artificial Vision*, 1274918 (28 July 2023), <https://doi.org/10.1117/12.3000368>.

- Lilian Calvet, Nicolas Maignan, Baptiste Brument, Jean Mélou, Silvia Tozza, Jean-Denis Durou, Yvain Quéau, "Multi-view Normal Estimation – Application to Slanted Plane-Sweeping," in *Scale Space and Variational Methods in Computer Vision. SSVM 2023*, Lecture Notes in Computer Science, vol. 14009, eds. L. Calatroni, M. Donatelli, S. Morigi, M. Prato, M. Santacesaria, Springer, Cham, 2023, pp. 54. [https://doi.org/10.1007/978-3-031-31975-4\\_54](https://doi.org/10.1007/978-3-031-31975-4_54).
- Baptiste Brument, Lilian Calvet, Jean Mélou, Jean-Denis Durou, "Reconstruction 3D d'un polyèdre convexe à partir de ses silhouettes," *18èmes journées francophones des jeunes chercheurs en vision par ordinateur (ORASIS 2021)*, Saint Ferréol, France, Sep 2021.

## Languages

French **Native**  
 English **Proficient (C1)**, Cambridge Linguaskill Business: 180+  
 Spanish **Basic**  
 German **Basic**

## Computer Skills

OS **Unix, Windows**  
 Languages **Python, Matlab**  
 Tools **Latex, Git, Microsoft Office, ReadTheDocs, Jupyter**  
 Software **Meshroom, Inkscape, Gimp**

## Hobbies

Sports **Tennis, Crossfit, Running**  
 Guitar **2 years of practice**  
 Others **Cinema, Music, Dance**