

Contact

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Claus Smitt 
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Ivisroot 

Languages

Spanish: Native
English: Adv. (C1)
German: Adv. (B2)
Italian: Basic (A2)

Skills

AI, Deep Learning, NeRF,
Differentiable Rendering,
3D geometry, SLAM,
Scene Understanding

Programming

Languages

Python, C/C++

Libraries

PyTorch, OpenCV, ROS,
sklearn, Pandas

References

Prof. Chris McCool
University of Bonn
cmccool@uni-bonn.de

Mario Munich
Embodied, Inc.
mariomu@gmail.com

Juan Tarrío
SLAMCore, Ltd.
juan.tarrío@gmail.com

Prof. Sol Pedre
CAREM25, CNEA
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Claus G. Smitt

AI Perception Robotist

Education

- Since 2020 **PhD. Candidate** **Institute of Agriculture, University of Bonn, Germany**
Thesis: Robotic Vision for Precision Intervention in Horticulture.
- 2014-2016 **Master of Engineering** **Instituto Balseiro, Argentina**
Thesis: Haptic telemanipulator for industrial robot arms.
- 2008-2014 **Electrical Engineer** **Universidad Nacional de Rosario, Argentina**
Thesis: Active vibration cancelling for parallel robots.

Experience

- Since 01/20 **Research Assistant** **Institute of Agriculture, University of Bonn, Germany**
3D neural scene understanding for agricultural robotics.
- 01/19-12/19 **Computer Vision Trainee** **iRobot Corp, Pasadena, US**
Visual SLAM & Sensor Fusion algorithms for consumer robots.
- 09/16-12/18 **R&D Engineer** **CNEA, Bariloche, Argentina**
Visual SLAM systems for inspection UAVs and robot automation.
- 03/13-07/13 **Intern** **KUKA Laboratories, Augsburg, Germany**
System test and software tools for collaborative robots evaluation.

Selected Publications

C. Smitt, M. Halstead, P. Zimmer, T. Läbe, E. Guclu, C. Stachniss, C. McCool. "PAg-NeRF: Towards fast and efficient end-to-end panoptic 3D representations for agricultural robotics", ArXiv pre-print arXiv:2309.05339, 2023.

IROS 2022 Best AgRobotics Paper Award:

C. Smitt, M. Halstead, A. Ahmadi, C. McCool, "Explicitly Incorporating Spatial Information to Recurrent Networks for Agriculture", in IEEE Robotics and Automation Letters (RA-L), presented at IROS 2022.

M. Halstead, A. Ahmadi, **C. Smitt**, O. Schmittmann, C. McCool, "Crop Agnostic Monitoring Driven by Deep Learning", Frontiers in plant science 12, 2021.

C. Smitt, M. Halstead, T. Zaenker, M. Bennewitz, C. McCool, "PATHoBot: A Robot for Glasshouse Crop Phenotyping and Intervention", IEEE International Conference on Robotics and Automation (ICRA), 2021.

Teaching

- Since 01/20 **Teaching Assistant** **University of Bonn, Germany**
Courses: Python applied to Machine Learning; MSc Project Mobile Sensing & Robotics; MSc Project Technology & precision Farming
- 02/16-12/18 **Teaching Assistant** **Instituto Balseiro, Argentina**
Courses: Signals & Systems; Digital Electronics.
- Since 2017 **Academic Supervision**
4 MSc theses; 3 Msc projects; 2 Summer school projects