Contact & links

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Languages

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

Skills

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

Programming

Languages
Python, C/C++
Libraries
PyTorch, OpenCV, ROS, sklearn, Pandas

References

Prof. Chris McCool
University of Bonn
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Mario Munich
Embodied, Inc.
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Juan Tarrio
SLAMCore, Ltd.
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Prof. Sol Pedre
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ClausSmitt

AI Perception Roboticist

Education

2020-2024 **PhD. Engineering (summa cum laude)** — **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.

2005-2007 **Electrical Technician** — **Colegio San José Nº 8013, Argentina**

Experience

Since 02/25 **Senior Machine Learning Scientist** — **Degas Ltd., Tokyo, Japan**
Geospatial foundation models for agriculture and natural disaster detection.

05/24-01/24 **State Estimation Engineer** — **Outrider, CO, USA**
Vision and LiDAR perception onboard autonomous trucks for yard operation.

01/20-04/24 **Research Assistant** — **University of Bonn, Germany**
3D neural scene understanding for agricultural robotics.

01/19-12/19 **Computer Vision Trainee** — **iRobot, CA, USA**
Visual SLAM & Sensor Fusion algorithms for consumer robots.

09/16-12/18 **R&D Engineer** — **CNEA, Bariloche, Argentina**
Edge-based monocular SLAM system for UAVs.

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”, IEEE Robotics and Automation Letters (RA-L), presented at ICRA 2024.

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

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

01/16-04/23 **Teaching Assistant** — **University of Bonn & Instituto Balseiro**
Courses: Python applied to Machine Learning; MSc Project Mobile Sensing & Robotics; MSc Project Technology & precision Farming; Signals & Systems; Digital Electronics

Since 02/16 **Academic Supervision** — **University of Bonn, Instituto Balseiro & CIFASIS**
4 MSc theses; 3 Msc projects; 2 Summer school projects