

Matthieu Zins

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EXPERIENCE

ARSPECTRA | COMPUTER VISION ENGINEER

📅 Aug 2023 - Present 📍 Foetz, Luxembourg

I am responsible for the Localization module of Augmented Reality glasses.

This includes:

- Research about visual-inertial SLAM (Simultaneous Localization and Mapping).
- Algorithm development (pose estimation, sensor fusion, eye calibration, ...).
- Implementation/optimization for embedded deployment (C++, Android NDK).
- Multi-sensors calibration (multi-cameras and IMU).

INRIA | PHD STUDENT IN COMPUTER VISION

📅 Oct 2019 - Dec 2022 📍 Nancy, France

Subject: *Visual Localization in a scene of objects*

- Focused on camera pose estimation in complex environments using objects as high-level semantic landmarks for Augmented Reality (AR).
- Combined geometrical reasoning with recent deep learning approaches for object detection.
- Development of an object-based visual SLAM system offering automatic semantic mapping and robust relocalization (presented as demo at CVPR).
- Publications in top international journal and conferences: IJCV, 3DV, IROS, ISMAR.
- Codes (Python and C++) released at gitlab.inria.fr/tangram.

KITWARE | COMPUTER VISION ENGINEER

📅 Oct 2017 - Sep 2019 📍 Lyon, France

- Worked on various projects including 3D reconstruction, SLAM, calibration, point cloud analysis, texture mapping and satellite imagery.
- Algorithm development for different RGB-D sensors: Kinect Azure, Intel RealSense, Pico Flexx.
- Contributions to KWIVER, an open-source toolkit for computer vision (C++).
- Development of texture mapping algorithms for urban 3D reconstruction from multi-view satellite imagery.
- Scientific papers review and presentation to the team.

SICK IVP | MASTER THESIS IN COMPUTER VISION

📅 Jan 2017 - Aug 2017 📍 Linköping, Sweden

Subject: *Color Fusion and Super-resolution for Time-of-Flight 3D Cameras*

- Sensor fusion between a time-of-flight camera and a color camera.
- Super-resolution techniques for depth cameras.

DELTACAD | SOFTWARE ENGINEER INTERN

📅 Aug 2015 - Feb 2016 📍 La Croix Saint Ouen, France

Subject: *Algorithmic processing for a Virtual Reality application*

- Parallelization of geometric processing with multithreading.
- Recognition of 3D annotations.
- Optimization of the import of 3D models: obj, 3dxml, collada, vrml, stl.

AWARDS

2019 Best paper Award of the 2019 CVPR Workshop EarthVision (as co-author)

EDUCATION

UNIVERSITÉ DE LORRAINE PHD IN COMPUTER SCIENCE

📅 Oct 2019 - Dec 2022 📍 France

LINKÖPING UNIVERSITY MSc IN COMPUTER SCIENCE

📅 Sep 2016 - Oct 2017 📍 Sweden

UTC COMPIÈGNE ENGINEERING DEGREE

📅 Aug 2012 - Oct 2017 📍 France
Computer Science with specialization in real-time and embedded systems

TU CHEMNITZ EXCHANGE SEMESTER

📅 Mar 2014 - Aug 2014 📍 Germany

LYCÉE HENRI NOMINÉ BAC SCIENTIFIQUE

📅 Sep 2009 - Jun 2012 📍 France
Obtained with highest honors

SKILLS

PROGRAMMING

Languages:

C++ • Python • C • Matlab

Libraries:

PyTorch • OpenCV • NumPy • SciPy • Android NDK • OpenGL • Eigen • Ceres-solver • g2o • Sophus • PCL • VTK • CUDA • Qt

Other:

Linux • Windows • Docker • Git • CMake • ParaView • Blender • Meshlab • Jira

LANGUAGES

- French: Native speaker
- English: Proficient user (C1 level)
- German: Intermediate

OTHER

Topcoder competitions: detection in satellite images, point-cloud processing, 3D data analysis, codebase optimization, ...

Sports: hiking, running, swimming