

Matthieu Zins

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EXPERIENCE

INRIA | PHD STUDENT IN COMPUTER VISION

📅 Oct 2019 - Dec 2022 📍 Nancy, France

Visual Localization in a scene of objects

- Focusing on camera pose estimation in complex environments using objects as high-level semantic landmarks for Augmented Reality (AR).
- Combine 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

- I have worked on various projects including 3D reconstruction, SLAM, calibration, point cloud analysis, texture mapping and satellite imagery.
- Algorithms development for different RGB-D sensors: Kinect Azure, Pico Flexx, Intel RealSense depth and tracking cameras.
- Contributions to KWIVER, an open-source toolkit for computer vision (C++).
- Development of texture mapping algorithms for a large research project about urban semantic 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

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

Algorithmic processing for a Virtual Reality application (C++)

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

COMPETITIONS

I regularly participate in Computer Vision / programming competitions (TopCoder):

- Circle Finder: Detection in satellite images | Python | *2nd place*
- Fault Detection in a 3D Seismic Volume | C++ | *3rd place*
- Codebase Fixes and Performance Optimization | C++ | *1st place*
- 3D-Mesh to Polyline Sticks Conversion | C++ | *2nd place*
- Calculation of Auxiliary Data for Geologic Fault Utilities | C++ | *2nd place*

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

UNIVERSITÉ DE TECHNOLOGIE DE COMPIÈGNE

ENGINEERING DEGREE IN COMPUTER SCIENCE

📅 Aug 2012 - Oct 2017 📍 France

Specialization in Real-time and Embedded Systems

TU CHEMNITZ

EXCHANGE SEMESTER

📅 Mar 2014 - Aug 2014 📍 Germany

LYCÉE HENRI NOMINÉ

BACCALAURÉAT SCIENTIFIQUE

📅 Sep 2009 - Jun 2012 📍 France

Obtained with highest honors

SKILLS

PROGRAMMING

Languages:

C++ • Python • C • Matlab

Libraries:

NumPy • SciPy • PyTorch •
OpenCV • Ceres-solver • g2o •
Eigen • PCL • VTK • OpenGL •
CUDA • Qt • GDAL

Other:

Linux • Windows • Git • CMake •
VS Code • Qt Creator •
ParaView • Blender • Meshlab

LANGUAGES

- French: Native speaker
- English: Proficient user (C1 level)
- German: Proficient user (C1 level,
no practice since 2014)

OTHER

Sports: hiking, trail, swimming