Matthieu Zins

@ zins.matthieu@gmail.com +33 (0)6 95 57 40 24
zinsmatt.github.io linkedin.com/in/zinsmatt github.com/zinsmatt

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*

- 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

- Work 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, 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 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

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

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

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

OTHER

Topcoder competitions: detection in satellite images, 3D data analysis, codebase optimization, ...

Sports: hiking, running, swimming