andrey **kudryavtsev**

computer vision engineer

mail & web

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🏠 avkudr.github.io

languages

russian: native
french: fluent
english: advanced

programming

C++
(opencv,openmvg,ceres,
nlopt,visp,eigen,
openmp,qt)
MATLAB
JavaScript
(electron, node.js)

projects

pollen3d 🏠
software for 3d
reconstruction from
mircoscope images
robest 🏠
c++ library of
RANSAC-based
optimizers

interests

computer vision, 3d reconstruction, augmented reality, SLAM, camera calibration, projector calibration, visual servoing, optimisation, robotics, c++ programming, problem solving

experience

since 2018 — **Computer Vision Engineer**   Modulo Pi, Paris, France
Project: Modulo Kinetic software {
> development of the algorithms for automatic calibration of multi-projector systems on flat and curved (dome) surfaces, multi-camera calibration, CAD-based 3D tracking in sparse point cloud, augmented reality for virtual studio applications; implementation in C++
}

2017-2018 — **Post-doc in Medical Robotics**   FEMTO-ST, Besançon, France
Project: control of a concentric tube robot (CTR) with SLAM using a camera installed in eye-in-hand configuration {
> development of a new simulator for CTR using Electron/JS; path planning based on a 3D point cloud estimated using SLAM; implementation of the control law in C++
}

2014-2017 — **Ph.D. in Computer Vision**   UBFC & FEMTO-ST, Besançon
University of Burgundy and Franche-Comte
Project: 3D Reconstruction in Scanning electron microscope {
> set of algorithms for a special type of camera (affine camera): pose estimation, selfcalibration, etc. All of them are implemented in a software written in C++ with OpenCV & Qt
}

2014 — **Master+engineer internship** (8 months)   FEMTO-ST, Besançon
Project: Visual servoing for automated assembly of microcomponents {
> Control of the micromanipulation station using visual feedback from two cameras. Work on a pose-based algorithm of visual servoing for parallel projection cameras(C++ with OpenCV & ViSP)
}

education

2012–2014 — **Engineer diploma** in Mechatronics
École Nationale Supérieure de Mécanique et des Microtechniques
Besançon, France

2011–2012 — **M.Sc.** in Automation and Control
Ivanovo State Power Engineering University (ISPEU)
Ivanovo, Russia

2007–2011 — **B.Sc.** in Automation and Control
Ivanovo State Power Engineering University (ISPEU)