

KUSHAL KUMAR



🏠 Schmidbergstrasse 34, 74074 Heilbronn, Deutschland

☎ 01623407086

✉ k.kumar13@outlook.com

🌐 Nationality: India

🗓 D.O.B: 31.12.1990

RELEVANT WORK EXPERIENCE / INTERSHIPS

Software Developer for Computer Vision and Machine Learning @ JACQ GmbH January 2019 - Present

Project: **Segmenting and Measuring feet in 3D point cloud data.**

Using deep learning (MASK RCNN) and 3D computer vision methods, we segment and measure the feet from the 3D point cloud data, which we obtain through a phone's depth camera. My tasks here are to design and implement these methods together with the team. We use Python and Pytorch for deep learning and C++ for the final product.

Research Assistant (Software developer) @ Universität Heidelberg October 2016 - January 2019

Project: **Development of an ultrasound simulator.**

Working as a research assistant in Experimental Radiation Oncology research group, my tasks were to develop an ultrasound simulator and test it extensively. The first prototype was built in Matlab, and the final solution using C++. The tests were written using the Google Test library.

Research Assistant @ University of Oulu (Also Master's thesis) November 2015 – May 2016

Project: **Pose estimation using two line correspondences and gravity vector for image rectification.**

Working as a research assistant at the Center for Machine Vision and Signal Analysis, I independently researched to get the pose of the camera by exploiting the perpendicular line correspondences found in nature (e.g. windows, floor, walls) and the gravity vector calculated through an Android device.

Intern @ University of Oulu June 2015 – July 2015

Implemented the library-free code for the BRISK keypoint detector in C.

EDUCATION

| YEAR | PROGRAM | UNIVERSITY | GRADE |
|---------|---|-----------------------------|--------|
| 2014-16 | Master of Science in Computer Science and Engineering | University of Oulu, Finland | 3.79/5 |
| 2009-13 | Bachelor of Technology in Electronics and Communication Engineering | JUET, Guna, India | 73/100 |

THESIS / OTHER RELEVANT PROJECTS

Master's thesis @ University of Oulu, Finland November 2015 – May 2016

Title: Pose estimation using two line correspondences and gravity vector for image rectification

<http://jultika.oulu.fi/Record/nbnfioulu-201609142782>

Bachelor's thesis @ JUET, Guna, India

July 2012 – May 2013

Title: IC Pin analysis using Wavelets and SVM

The IC images were analyzed for defects using image processing (DWT) and classified using a Support Vector Machine model by taking the statistical image parameters as features.

Member of a top three team, Demola Oulu Innovation Challenges

We, as a team participated in two innovation challenges, one for each year I was in Oulu. Our team was in top 3 each time to provide an innovative solution to real world projects.

RELEVANT SKILLS

| | |
|----------------|---|
| Communication | English, Hindi : Fluent Deutsch : Basic (Level A1) und lernen schnell! |
| Leadership | Acting alumni ambassador, University of Oulu |
| Experienced in | C++, Python, 3D Computer Vision, OpenCV, Deep learning, PyTorch, Keras, PCL, Scrum, Git |