

# Sushant Vijay Chavan

📍 Bonn, Germany (Open to relocation)    🔗 <https://sushant-chavan.github.io>  
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## WORK EXPERIENCE

### Student Research Assistant

#### KELO Robotics GmbH

📅 Jul 2020 – Present    📍 Sankt Augustin, Germany

- Propose and use a novel indoor semantic map representation
- Design and implement single/multi robot simulation software using Gazebo and Unity3D (with ROS-Sharp) respectively

### Student Research Assistant

#### ROPOD Project, Hochschule Bonn-Rhein-Sieg

📅 Jun 2019 – Apr 2020    📍 Sankt Augustin, Germany

- Develop a flexible Gazebo-based simulator for testing high-level execution of tasks by a fleet of mobile robots
- Setup and maintain continuous integration of software packages

### Senior Software Engineer

#### Robert Bosch Engineering and Business Solutions Private Limited

📅 Sep 2013 – Dec 2017    📍 Bangalore, India / Hildesheim, Germany

- OpenSceneGraph & Navigation Data Standard (NDS) based 3D map visualization application for in-vehicle infotainment systems
- Implement highly optimized algorithms for rendering 3D building models on embedded devices with limited computing power

## RELEVANT PROJECTS

### Composable Ontology-based Indoor Semantic Map

#### Master Thesis, Hochschule Bonn-Rhein-Sieg

- A novel framework to flexibly compose new maps from a prior collection of heterogeneous metric-semantic indoor maps
- Employ an ontological knowledge-base together with the composed maps to plan context-dependent indoor navigation plans

### Simulator for modular KELO ROBILE mobile robots

#### KELO Robotics GmbH

- A ROS package to simulate arbitrary configurations of modular mobile robots in Gazebo with an option to activate true physics-based wheel motion, resulting in the motion of the platform

### Comparative evaluation of experience-based path planners for multi robot Systems

#### Hochschule Bonn-Rhein-Sieg

- Port and quantitatively evaluate the suitability of using single robot experience-based path planners for a fleet of logistic mobile robots, using a custom-developed benchmarking framework

## EDUCATION

### M.Sc. in Autonomous Systems

#### Hochschule Bonn-Rhein-Sieg, Germany

📅 Apr 2018 - Aug 2022 (expected)

Current German GPA 1.18

### B.E. in Electronics and Communications

#### Visvesvaraya Technological University, India

📅 Aug 2009 - Jun 2013

Distinction with an aggregate score of 82%

## ACHIEVEMENTS

✍ Co-authored a patent filed by Robert Bosch Car Multimedia GmbH

🎓 Awarded the *Deutschlandstipendium* (German Scholarship) 2019/20

🌟 Awarded the *Fresher Of The Year 2013* at Robert Bosch, India

🎓 Awarded the *CSSS 2009 Scholarship* by the Ministry of Human Resource Development (MHRD), India

## TECHNICAL SKILLS

### Programming Languages

Modern C++    Python    Shell Scripting

### Libraries/Frameworks/Tools

Git    ROS    PCL    CGAL    OpenCV  
hdl\_graph\_slam    mcl\_3dl    OctoMap  
URDF    Xacro    ROS#    Gazebo    Unity  
Owlready2    OWL 2    SWRL    Protégé  
Doxygen    pybind11    Jenkins    GitLab CI  
glog    Docker    Jupyter    VS Code    Linux

### Competencies

Indoor robot navigation    Robot simulations  
Classical AI (Search, Logics, & Planning)  
Multi-agent systems    Robot manipulation  
Machine Learning    Neural Networks