RACHITH PRAKASH

Hyattsville, MD 20783 | 240.817.8469 | rprakas2@umd.edu | https://www.linkedin.com/in/rachithprakash | https://rachithp.github.io

EDUCATION

UNIVERSITY OF MARYLAND, A. JAMES CLARK SCHOOL OF ENGINEERING College Park, MD

- **Master of Engineering** in **Robotics** **GPA: 4.0/4.0** 05/20

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL (NITK) Mangalore, India

- Bachelor of Technology in **Electronics** and **Communication Engineering**. 05/16
- **Honors**: Full tuition waiver awarded to top 0.2% candidates in All India Engineering Entrance Exam by Govt. of India

PROFESSIONAL EXPERIENCE

MICRO FOCUS Bangalore, India

Senior R&D Software Engineer 09/16 - 07/18

- Developed shell scripts to streamline configuration and installation of Operations Bridge Reporter (OBR) - a cross domain reporting solution that provides data warehousing (Vertica), ETL(Extract, Transform, Load) and reporting (SAP Business Objects) capability across various domains.
- Headed the maintenance, installation, configuration of Vertica database to align requirements of OBR.
- Provided training of OBR product to new team members, customers and support team.
- Went beyond assigned duties to provide technical support for customers and Micro Focus support teams.

COURSEWORK/SKILLS

Relevant courses: Planning for Autonomous systems, Controls for Robotics systems, Robot Modeling, Computer Vision, Perception for Autonomous systems, Machine Learning; Theory and Applications

Software Skills: Python, MATLAB, Bash, ROS, C++, C, MySQL, LaTeX

Tools: OpenCV, Simulink, TensorFlow, Keras, scikit-learn, Pandas, V-Rep, Gazebo, Docker, Kubernetes

Certifications: Scaled Agile Framework (SAFe) 4 Practitioner, SAFe 4.0 for Teams

RESEARCH/PROJECTS

- **Coverage Path Planning** with obstacle avoidance for UAVs 03/19- Present
- **Autonomous Drone Navigation** using **FlightGoggles** simulation framework (Unity3D, **ROS**) 01/19 -Present
  - Cascaded PID controller for **Position, Attitude** and **thrust** Control
  - Experimenting **SLAM** implementations such as **ORB_SLAM2** for mono and stereo vision
- **3-D localization** of quadrotor. 12/18
  - Tracking quad's spiral movement using **April Tags**. **GTSAM** for bundle adjustment
- **Forward** and **Inverse Kinematic** Modeling of Baxter arm with simulation in V-REP 10/18
- Modeling and controls of **Double Inverted Pendulum** on a moving cart. **LQR, LQG** controller. 11/18
- **Technical Report** on 'Control of Ensembles of robots with Non-holonomic constraints' 11/18
- Implementation of **Roto Brush** (**Adobe after effects**) 11/18
  - **Segmenting** deformable object and tracking it across frames of a video.
- **2D Panorama Stitching** 10/18
  - Cylindrical projections, Homography transformations, refining using RANSAC, warping and blending.
- **Nao robot's vision** system 09/18
  - Color Segmentation using **Gaussian Mixture Models** and **Expectation Maximization (EM)** algorithm.
- **Brain Computer Interface**, Undergraduate Research, NITK 07/15 - 05/16
  - Completed data collection of 50 volunteers by recording their **EEG** signals corresponding to imagined left/right arm movement using a 16-channel headset Epoch by Emotiv.
  - **Researched** and **implemented** pre-processing techniques, feature extraction techniques, **machine learning algorithms** to obtain accuracy of 80% on the dataset for 2 control signals in real-time.