JERRIN BRIGHT

AUTONOMOUS SYSTEMS | PERCEPTION

LINKEDIN | GITHUB | MAIL | PORTFOLIO | SCHOLAR | NGO

EDUCATION

Under graduation- VIT Chennai — *2018 - Present*
B Tech Mechanical Engineering — *CGPA- 8.25*
School- Chettinad Vidyashram — *2003 - 2018*
CBSE Computer Science — *10th - 9.4; 12th - 83%*

WORK EXPERIENCE

Globalink Research Intern
McMaster University, Ontario, Canada, *Starting from June*
Designing and testing software for controlling a pneumatically-powered soft robotic arm. It will acquire real-time data from several sensors and implement suitable model predictive control system.

Summer Undergraduate Research Intern
Arizona State University, *Starting from May*
Using laser scanning and photogrammetry to digitalize environments. Visual data collected from sensors are fused into a unified system and computer vision algorithms are used for automated analysis.

Autonomous System Developer Intern
Aero2Astro- drone based company, *Nov 2020 - Present*
Developing ROS based autonomous navigation firmware using Visual Inertial SLAM concepts for indoor environment to eradicate GPS usage

Data Science Intern
BrainMagic InfoTech Pvt Lmt, *May - July 2020*
Automobile part recognition using transfer learning, data augmentation technique resulting in an IOU of 95% and deployed later in AWS.

Project Research Intern (Perception)
Yuan Ze University, *April - June 2020*
Built a robust smart parking system using semantic segmentation with ConvCRF and Atrous Conv enhancing the visual capability of the system

Team Captain and Co-Founder
Atom Robotics, *Jan 2019 - Present*
An Intelligent Robotics and Satellite exploration team consisting of 50+ aspiring young minds. The team focuses on IGVC, CanSat (NASA), etc.

PUBLICATIONS

Optimization of quadcopter frame using generative design and comparison with DJI F450
Jerrin Bright et al 2021 IOP Conf. Ser.: Mater. Sci. Eng. 1012 012019

ASERNET: Attention Embedded Squeeze-Excitation Residual Network
Jerrin Bright et al [Currently In Progress]

EXTRA-CURRICULAR

ML Blog Contributor, *Oct 2020 - Feb 2021*
National Service Scheme, *May 2019 - Present*
IEEE- Robotics & Automation, *April 2019- May 2020*
Research Fellow- MSRF (NGO), *Oct-Dec 2020*

SKILLS

Design and Simulations
Solidworks, Fusion360, MATLAB, Gazebo, RViz, RVEP
Programming Tools
C++, Python, Embedded Systems, Java, C, HTML, CSS, JS
Machine Learning Tools
OpenCV, TensorFlow, Keras, PyTorch, Scikit, Numpy
Operating Systems
Windows, Linux Ubuntu, ROS, Raspbian OS

PROJECTS

Vestium- Smart Robotic Closet
Robotic Furniture for optimal and smart living. It is packed with plenty of space, hiding the bed when not in use at the touch of a button. It can be used as an entertainment center, home office, storage in one closet.

Autonomous MAV enhanced with door-to-door delivery topographies
Position, Altitude PID based System & Perception. Developed a ROSpy based control system for a MAV to transverse to a set of GPSs setpoint autonomously picking and delivering a package.

Robust Chest Xray Detection Architecture
Built a convolutional system for x-ray detection of 14 different chest diseases. The fusion of UNet and Residual Networks, and autonomous cropping using contours, extrema & augmentation resulting 94.7% IOU

RTAB-Map SLAM embedded AGV for autonomous navigation in indoor scenes
Implemented 3D mapping using Kinect and RGB-D Camera sensors in an indoor environment. Real-time appearance-based mapping (RTAB-Map) was used to make the 3D map simulated in Gazebo environment

Intelligent Visual Robotic Inspection system for fault detection
Automated visual inspection with CMOS Camera using local binary pattern histogram (LBPH) algorithm and dimensional analysis and detection of defects, faults, corrosions using ML approaches.

Competition-based Robots
Intelligent Ground vehicles, Can-Satellites, Battlebots, Law Following Robot, Obstacle Racer, Autonomous Self Driving Robot, Robo-Soccer, Maze Runner, Sumo Robot, Drag Racer, BattleBots, RC Nitro Cars, etc

ACCOLADES

Outstanding Research Paper Award
RIACT 2020 International Conference
Recognized Galactic Problem Solver
NASA International Space Challenge
Winner of KURUKSHETRA'20, CEG
RoboZest, National Level Techfest
Winner of CURRENTS'20, NIT Trichy
Autonomous Line Follower
Winner of VASHISTH'19, IIIT Kanchipuram
Autonomous Line Follower