

Jobin Binoy George

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EDUCATION

Columbia University, School of Engineering and Applied Sciences <i>Master of Science in Mechanical Engineering (Concentration: Robotics and Control) [GPA: 3.8]</i> Coursework: Deep Neural Networks, Data Science for Engineering, Advanced Robotics	New York, NY Expected Dec 2021
New York University, Tandon School of Engineering <i>Bachelor of Science in Mechanical Engineering [GPA: 3.6] with Cum Laude Honors</i> <i>Minors in Aerospace Engineering, Nuclear Engineering and Computer Science</i>	Brooklyn, NY May 2020

PROFESSIONAL EXPERIENCE

Evtex Machine Learning Research Intern <ul style="list-style-type: none">Deploying deep learning models to implement an identification, masking and sorting algorithm for efficient recycling with OpenCV and PyTorch	New York, NY Sep 2021 - Present
Columbia University Graduate Teaching Assistant - Modelling and Identification of Dynamic Systems [MEBM E4439] <ul style="list-style-type: none">Mentoring students with coursework by increasing overall retention of course material Graduate Course Assistant - Data Science for Mechanical Systems [MECE E4520] <ul style="list-style-type: none">Guiding students in optimally completing the homework assignments	New York, NY Sep 2021 - Present
Columbia University ROAM Lab Graduate Research Assistant under the supervision of Dr. Matei Ciocarlie <ul style="list-style-type: none">Led control firmware development for a modular, biomimetic serpent by employing Reinforcement Learning models, Model Predictive Control and PID loopsCollaborated with members of ROAM lab in diagnosing and debugging bottlenecksFormulated ROS nodes for publishing commands and listening to robot state logsDeveloped mechatronic components (IMU's, Magnetic Encoders, Servo Motors, Optical Sensors) in C++ for data logging at 100 Hz via a CAN network linked to ROS nodes and microcontrollers	New York, NY Nov 2020 - Present
NYU Mechatronics Lab Robotics Research Assistant <ul style="list-style-type: none">Simulated multi-nodal robotics navigation on ROS Gazebo with TurtleBot modelsScripted publisher/listener nodes in C++ for odometry feedback and teleoperation	Brooklyn, NY Aug 2019 - May 2020
NYU LaGuardia Studio Student 3D Specialist <ul style="list-style-type: none">Designed intricate prototypes, 3D scans and sculpts in SolidWorks, CATIA and RHINO 3D for professors and studentsBrainstormed with clients regarding modelling (SolidWorks), mesh restructuring (Autodesk, NETFABB and Ansys) and in efficient use of 3D printing technologies (FORTUS, 3DSystems)	New York, NY May 2018 - Sep 2019

ACADEMIC PROJECTS

Course Related Projects - Columbia University <ul style="list-style-type: none">Scripted functions in C++ for cartesian control, inverse kinematics, motion planning, state estimation and particle filtersImplemented neural nets from scratch with PyTorch and TensorFlow/Keras for robot dynamics and robot actuation [CNN, RNN, Deep-Q Learning, MLP, SVM, Logistic Regression]Developed evolutionary algorithms from scratch in C++ and Julia to model a walking robotLeveraged CUDA and parallel programming to decrease training computation time	New York, NY Sep 2020 - Present
Mechanical Wheelchair for Paraplegic Patients - New York University Capstone Project <ul style="list-style-type: none">Modelled and optimized a mechanical standing wheelchair on SolidWorks and AnsysReduced overall weight of wheelchair by 10% and optimized the gas-spring mechanism	Brooklyn, NY Sep 2019 – May 2020
Structural Analysis of the Transportation Pod - NYU Hyperloop Team <ul style="list-style-type: none">Employed a stability suspension component with gas struts to restrict lateral motion of system by 30% and conducted thermal/structural analyses on Ansys	Brooklyn, NY Sep 2018 – Aug 2019

SKILLS

Programming: ROS, MATLAB, Python, C++, JAVA, CUDA, OpenCL, Julia, HTML/CSS, R

Design and Analysis: SIEMENS NX, SOLIDWORKS, AutoCAD, Rhino 3D, CATIA, DESIGNX, ANSYS Mechanical APDL, Altair Optimization

Prototyping: Additive Manufacturing, Welding, Machining, CNC Milling, Acrylic Laser Cutting