## **OBJECTIVE**

**Karan Vivek Bhargava** 4313, Rowalt Drive, Apt #102, College Park, MD 20742

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To obtain a summer internship in robotics engineering with a focus on machine learning or computer vision

**EDUCATION**

**Masters in Robotics Engineering** Aug ‘16 - May ‘18 (Expected)  
University of Maryland, College Park, Maryland GPA: N/A

**Coursework:** Machine Learning, Robot Modelling & Control of Robotic Systems

**Bachelors of Engineering (Honors) Electronics & Instrumentation Engineering** May ‘15Birla Institute of Technology and Science, Pilani, India CGPA: 7.65/ 10.0

**Coursework:** Image Processing, Digital Signal Processing, Analog & Digital Design, Signals & Systems

**Honor:** Awarded the **Srikant Visweshwariah Analog Design Award 2014** for excellent academic performance

**Activities & Societies:** Instrumentation Forum, Creative Activities Club, RC Club, Maharashtra Mandal (Publicity & Editing Team Lead)

**EXPERIENCE**

[Grey Orange, India](http://www.greyorange.com/) **- Hardware Research and Development Engineer** May ‘15 - May ‘16

Involved in the development of the ‘butler’ robotics product line. [Butlers](http://www.greyorange.com/products/butler/) are industrial grade mobile robots which carry storage racks around the storage facility (warehouse), directly fetching items for the operator.

* Independantly built and programmed a new modular charging system (PCB & assembly) which solved critical problems like static discharge, EMI on input signal lines which were a common occurrence in Singapore and China installations
* Single handedly and voluntarily designed the harness assembly for the entire butler system and initial vendor management for manufacturing the same
* Implemented testing jigs in production facilities for checking individual PCBs and harnesses. Reduced the failure rate due to harnesses from 50% to 5% by proposing checkpoints in production
* Independantly maintained the embedded layer code for the charging and power scheduling systems

[STMicroelectronics Pvt. Ltd, India](http://www.st.com/content/st_com/en.html) **– Trainee** June’14 – Dec’14

* Researched recent workflow development in VLSI simulation industry using technical journals
* Independantly wrote a 30-page report on optimizing the workflow for modelling phase locked loop intellectual properties as black boxes for simulation to update senior engineers
* Report pursued management to make changes in the methodology and decrease simulation time by 40%

[MG Automation Technologies, India](http://www.mgat.in/) **- Embedded Intern** May ‘14 - June ‘14

* Led a team of three people to prototype a segway system and implemented PID control on a microcontroller
* Helped conceptualize an IoT product which was submitted to HAXL8R, a hardware accelerator in Shenzen

**TECHNICAL PROJECTS**

**Handwriting Learning Module using CMAC Learning Algorithm** Sept ‘16 – Present

* Implemented a recurrent CMAC network based on Marr-Albus cerebellum theory to learn a signature curve
* Succeeded in learning cursive signatures containing loops
* Presently working on classifying different strokes in a signature to learn more complex signatures.

**Design and control of Wall-E** Sept ‘16 – Present

* Designed the CAD for the assembly in Inventor and imported it to simscape for controlling the motion
* Was able to make the model perform various emotions and also was able to perform pushups.

**Smart-Shoe for Indoor Monitoring** Aug ‘13 - Sept ‘16

* Pinpointed location of a person in a small space by measuring the data from accelerometer and gyroscope
* Interfaced the sensors & programmed the microcontroller.

**Grid Solving Robots for Industrial Applications** May ‘15 - Jun ‘16

* Built differential drive behavioral robot systems capable of line following
* Implemented the algorithm for traversing the grid to reach a specific coordinate without crashing

## **TECHNICAL SKILLS**

* **Languages:** C, C++, Python, Embedded C, Arduino, x86 Assembly Language
* **Tools**: Autodesk Inventor, Altium, Eagle, LABVIEW, MATLAB, Simulink, Cadence Virtuoso and Eldo
* **Others:** Well versed in PCB Printing and prototyping (Protomat S103), 3D printing (Cube3D)