


# Shashwat Verma

 GitHub  linkedin

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 363 Van adrichemstraat, 2614BS, Delft

## Embedded Systems Engineer















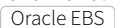





**Personal statement :** Student of Embedded System specialising in Networking and Software, at TU Delft. I want to pursue my further career in embedded software development.

**Interests :** Embedded programming, inter-device communications, Real-time OS.


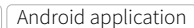




## Education

- Aug 2015 – Nov 2017 (expected) **Master of Science (MSc)**, *Technical University of Delft*, Delft, Netherlands  
Embedded Systems. *Specialisation* : Networking and Software.  
Relevant course work : Real-time Systems, Wireless Networking, Real-time Embedded Systems.
- July 2010 – May 2014 **Bachelor of Technology (B.Tech)**, *VIT University*, Vellore, India  
Electronics and Instrumentation Engineering

## Work Experience

- Dec 2016 – Present **Research Assistant, Disdrometrics B.V, Delft, Netherlands**  
➤ Software development and testing for acoustic rain and hail sensors.  
➤ Successful designing of multi-hop wireless modules for long distance irrigation system.  
➤ PCB design for the acoustic sensors and irrigation system.  
    
- Jan 2017 – May 2017 **Electronics Engineer, Eco-runner Team, Delft, Student team participating in shell Eco-marathon**  
➤ Designing communication API for sensors linked to resource-constrain ATMEGA controller.  
➤ Software for Real-time data transfer between vehicle's MCU and central station using GPRS.  
   
- Sep 2016 – Dec 2016 **Research Intern, Disdrometrics B.V, Delft, Netherlands**  
➤ Communication between sensors and cloud using Lora and GPRS.  
➤ Designing power control unit for low-energy sensor and communication unit.  
   
- July 2014 – June 2015 **Program Analyst Trainee, Cognizant Technology Solutions, Kolkata, India**  
➤ Worked as an Oracle EBS (PL/SQL) developer.  
➤ Helped in designing data migration tool based on PL/SQL and bash.  
➤ *Achievement* : Part of best team in India during Q1 2015 for Oracle EBS.  
   
- Jun 2012 – July 2012 **Intern, C.E.E.R.I, Pilani, India, Electronics R&D institute of Indian government**  
➤ Studied VHDL programming for FPGA.  
➤ Successfully implemented a low-pass audio filter on FPGA using VHDL.  
  

## Projects

- Feb 2017 – Present **Analysing performance of Light to Camera links, TU Delft, MSc Thesis**  
➤ Used VLC(Visible Light Communication) as data channel in system.  
➤ Designed android application with JNI for using smart-phones as data receiver.  
➤ Utilised OpenCV for transmitter detection and image processing.  
➤ Utilised Matlab for data analysis and classification using machine learning.  
     

Sep 2016 Nov 2016	<b>Embedded control software for UAV, TU Delft, Delft</b> <ul style="list-style-type: none"> <li>&gt; Successfully designed communication protocol for data transfer between UAV and PC.</li> <li>&gt; Implemented real-time control algorithm on ARM M0+ to stabilise UAV and safe manoeuvring in air.</li> </ul> <div>Embedded C Real-time system Control algorithm</div>
April 2016 June 2016	<b>Image processing algorithm on MSP430, Delft,</b> <ul style="list-style-type: none"> <li>&gt; Implementing parallel processing and data-transfer between 2 processor unit using semaphores.</li> <li>&gt; Successfully ported canny edge detection algorithm on MSP430 using SIMD Neon instruction set.</li> </ul> <div>Embedded C Computer Vision Linux</div>
Sep 2015 Nov 2015	<b>Baggage management system using functional programming, Delft,</b> <ul style="list-style-type: none"> <li>&gt; Designed 4 parallel controllers using mCRL2 functional programming.</li> <li>&gt; State-space and dead-lock analysis using <math>\mu</math>-calculus.</li> </ul> <div>mCRL2 <math>\mu</math>-calculus</div>
Jan 2014 May 2014	<b>Automated Green-house status monitoring and Control using wireless DCS, VIT University, Bachelor Project</b> <ul style="list-style-type: none"> <li>&gt; Designed multi-hop wireless communication protocol using RF-transceivers and bluetooth.</li> <li>&gt; Made PCB for various sensors modules using Eagle-PCB designing tool.</li> <li>&gt; Implemented central control unit for controlling physical parameters based on sensor values.</li> </ul> <div>Embedded C LabView PCB Design Wireless communication Bluetooth</div>
Jan 2013	<b>Secure connection between three controllers, Vellore,</b> <ul style="list-style-type: none"> <li>&gt; Implemented an encrypting and decrypting algorithm on ARM M3 based on running key cipher.</li> </ul> <div>ARM M3 LabView</div>
Feb 2012 Sep 2012	<b>Efficient Traffic light system, NI-yantra 2012, Chennai</b> <ul style="list-style-type: none"> <li>&gt; This project was selected for final round of all-India NI-yantra competition.</li> <li>&gt; Designed priority based traffic light system for emergency vehicles.</li> </ul> <div>LabView C++ IR communication</div>

## Skills

<b>Programming Skills :</b>	C, C++, Python, Matlab, SQL, Git, Java.
<b>Embedded Programming :</b>	<i>master in</i> Embedded C for micro-controllers (ATMEGA, PIC, etc.). <i>familiar with</i> most STM controllers and other resource constrained platforms. <i>familiar with</i> Real-time Operating System.
<b>Computer Vision :</b>	<i>good understanding of</i> image processing (segmentation, object detection, etc.).
<b>Misc :</b>	<i>good understanding of</i> LabView, PCB Design using Eagle. <i>good understanding of</i> wireless protocols (ZigBee, Bluetooth, Wifi etc.). <i>understanding of</i> Android application development and JNI. <i>familiar with</i> SQL, PL/SQL and SQL-lite.

## Extracurricular Activities

2017	Member of student racing team, Eco-Runner TU Delft.
2012	Organised an event (Robo-Ape) in GraVITas'12 (College technical festival).
2012-2013	Publicity Head for ISA-VIT student chapter, VIT Vellore.
2004-2007	Served as a volunteer in local NGO(Siksha), Pilani.

## Languages

<b>English :</b>	Reading ● ● ● ● ● Listening ● ● ● ● ● Speaking ● ● ● ● ○	<b>Hindi :</b> native
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## Interests

Swimming, sketching, cooking, bowling