

Asharib Abdul Musawwir

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Education

2014-2018 MEng (Hons) Electronic Engineering, The University of Manchester

Grade: 2:1 (68%)

Relevant modules studied

- Digital Systems Design
- Electronic Circuit Design
- VLSI Design
- Data Networking
- Nanoelectronic Devices and Nanomaterials
- High Speed and Mixed Signal Design

Group Projects

2017-2018 Instrumented Training Wheelchair for Para-athletes in a team of 8 members – Grade

Achieved: 69%

- Developed a training suite in collaboration with Olympic medallist Andy Small and his coach Rick Hoskins.
- Assigned the role of team secretary and responsibilities included co-ordinating group meetings with the project supervisors and the client, setting the meeting agendas, organising minutes from the meetings and following up on critical actions.
- Responsible for version control of the project to ensure that we had redundancies set in the event of a new feature failing.
- Designed the GUI with the objective to make the system as user friendly as possible.
- Established two-way communication between the system and the UI to ensure reliable data transfer and safety.

2015-2016 Embedded Systems Project in a team of 5 members – Grade Achieved: 71%

- Developed the code of the robot using C language on a PIC microcontroller which included, line following, changing heading by changing the power output from the motors on the wheels by changing their duty cycles by PWM modulation.
- Responsible for designing and optimizing the circuit of the infrared sensors used by the robot to detect a white line on a black surface. This experience gave me my first real experience of variable external noise in electronic circuits and how to mitigate such noise using capacitors and external shielding.

Individual Project

2016-2017 ECG Heart Rate Monitoring using Graphene Electrodes – Grade Achieved: 72%

- Using ECG signal collection, a heart rate monitor was designed on a bespoke PCB. The sensor was able to work with medical grade sensors but failed to operate reliably when graphene electrodes were used due to an inconsistent connection between the electrodes and the body.

2012-2014 Nixor College, Karachi

- A level: Chemistry (A) Mathematics (A*) Further Mathematics (A), Physics (A*)

1999-2012 Beaconhouse School System, Karachi

- O level: 9 (5A*s, 1A, 2B, 1C) including Mathematics and English

Experience

2012-2014 Teacher's Assistant (Physics and Further Mathematics) at Nixor College, Karachi

- Selected to tutor students who were having issues understanding specific concepts during lectures both individually and in groups. Classes were held on weekly basis and fundamentals were covered.
- This experience enhanced my ability to breakdown complex problems into simple, easy to understand steps.

Sept – Dec 2013 Lead Engineer for the School's House team in the 'Raft Regatta', Karachi

- Managed a team of 10 Engineers and worked with the finance and design team leaders to make a raft on a budget which could sail 6 people 100m in the sea and come back the fastest.

- The engineering team had regular meetings with the design team and the project managers with the objective of finding the most cost effective, fastest and solid solution until everyone was satisfied with the design. This included calculating the buoyancy, the maximum possible weight the raft could carry and designing an efficient and lightweight sailing mechanism.
- Our raft finished 5th out of 23.

Volunteering

2017-Present Biko Bikes, Manchester

- Restored and repaired bikes which were donated to the project through charity. These bikes were loaned to students who wanted to get into cycling providing free maintenance and repairs during the loan period.
- Responsible for teaching the users basic maintenance procedure such as gear indexing, mending a puncture and cleaning the drivetrain.
- Managed the bike rental database and was trusted to store the cash deposits given by the users.

2012-2013 Nixor Engineering Solutions

- Developed a Go Kart's steering mechanism using spring mechanisms.
- Developed a Rube Goldberg Machine to turn on the lights in a school event.

Skills

IT Skills: Java, C, C++, Python, and assembly languages.
Microsoft Office, Solidworks CAD, Altium Designer, Cadence Virtuoso, Multisim, Matlab, Visual Studio, and Arduino.

Driving: Full clean driving licence

Interests and hobbies

- Cycling with the University of Manchester Cycling Club.
 - Raised money for Maggie's Cancer Centres by taking part in a stationary 24 hour ride on a turbo trainer.
- Played cricket at club level for Swinton Moorside Cricket Club.

References available upon request