Michael Thomas Ratcliffe
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UK National with full, clean driving licence

Mechanical and Electrical Engineer, motivated by projects, with strong foundations and experience in automation, control, and computational mathematical modelling/simulation of real world systems.

Education and Qualifications

2012- 2014 **Lancaster University, Lancaster**
MSc by Research Mechanical Engineering
Funded by the Sir John Fisher Foundation

Research Project and Publication: "BLDC Motor Power Control Techniques, A novel current control technique" This research project was aimed at summarising the current state-of-the-art with respect to digital motor commutation techniques, progressed to propose and simulate a novel current control technique aimed at increasing efficiency at high speed part load conditions. It was heavily based around simulation, leading to a good base knowledge about how simulations are performed and implemented and provided a great opportunity to network with leading researchers from around the world. Work was presented and published at IEEE POWERENG international conference [Istanbul, Turkey].

2009- 2012 **Lancaster University, Lancaster**
BEng (Hons) Mechanical Engineering (**2.1**)
(**Accredited** by the IMECHE)

Primary Project: "ARTEMIS PROJECT": A novel air-siphon power generation & environmental regeneration solution using lake Grevelingen (Holland) as a case study" Involves researching and assessing the viability of air siphon technology in a maritime environment.

Year	Average Grade	General Engineering	Mechanical Specific
First	**Class:** IIi **(Average 68%)**	63%	78%
Second	**Class:** IIi **(Average 68%)**	63%	77%
Third	**Class:** IIi **(Average 65%)**	64%	65%

2007 – 2009 **Wigan & Leigh College**
National Diploma in Mechanical Engineering treble grade: **DISTINCTION-DISTINCTION- MERIT**
National Certificate in Mechanical Engineering double grade: **MERIT- MERIT**

Abraham Guest High School
Usual cluster of subjects, with grade's consisting of **A**'s and **B**'s.

Key Skills and Competencies

Computational skills
Along with being computer literate with respect to the usual Microsoft office programs, also proficient in the use of:

- Solid-Works/Autocad
- SimuLink
- MATLAB
- C++
- Linux
- Arduino IDE
- PID Control
- Logic Gates

Technical skills and Competences
A busy personal life and strong academic achievements have strengthened many technical skills and competences, some noteworthy ones can summarised as such:

- Computational Simulation
- Automation, sensing and control
- Energy conservation/ process refinement
- Technical writing
- Electrical and Mechanical principals
- Mathematical practices and theory

Team Work, Leadership and Communication
Culturally sensitive and internationally travelled leader working well as a productive part of a team comes naturally, identifying attributes and strong personal traits suited to tasks and putting personal ego aside for the benefit of the team, but still using initiative and taking the lead when necessary to give the team motivation, direction and conflict management. International research collaboration and workshop leadership honed the ability to present complex ideas and developed concise, technical writing skills and communicate well through written reports and publications.

Projects

Some examples of past projects can be seen below, many were successful some failed and none exploded.

- Non contact Hydropower
- BLDC motor control
- Aquaponics automation
- Quadcopter noise reduction
- Feedback tuning
- Home automation
- Renewable energy integration
- Weather measurement

Elemet14's Member of The Month September 2015: For exceptional projects and documentation

Career History

Collaborator and Control Systems Engineer [Aquaponics-Lab, UK]
2015 –Current

- System automation and optimisation of aquaponic systems.

English Tutor [Beijing, People's Republic of China]
2014-Current

- Worked with students on a one to one basis, mainly to develop communication skills.

Lab Assistant and Demonstrator [Lancaster University]
2012- 2013

- Lab assistant for modules of interest, working with students building knowledge and understanding needed to implement tasks presented in practical labs.

Customer Assistant [Esso Petrol Station]
2005- 2009

- Progressed from till operative to be a competent member of staff and oversee the delivery of fuel and chilled goods whilst maintaining part time status.

Hobbies and Interests

Problem solving, automation/control, electronics, Farming, aquaponics, travel, DIY and automotive maintenance, along with reading and teaching.

References

Examples of work quality, academic and professional references available upon request.

To whom it may concern,

I write in support of Mr Michael Ratcliffe's application to work as a Laboratory supervisor in electronic engineering laboratories.

I have known Michael as an undergraduate to post graduate student, and via his keen interest in multi rotor model aircraft design.

As a student his work has always been presented to a very high standard, I am certain he would encourage similar standards in students he was supervising.

As a post graduate Michael has worked as a supervisor in undergraduate laboratories run by myself, with competence and enthusiasm. His sound understanding of the fundamentals of electronics, electromechanical devices, micro controller interfacing, and physical model building, make him an ideal candidate for Laboratories involving robotics and controlled electromechanical devices, or any subset of these activities. I have no hesitation in recommending him for such duties.

R O Mackin

Research Fellow.

Lancaster University Engineering Department.

Bailrigg.

Lancaster.

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