

Mike McHugh,
39 Botanic Avenue,
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Dublin.

Dear Sir/Madam,

I hope you accept the following submission of recommendation for Tyron Pretorius; forgive me if it runs a little long.

I first met Tyron whilst helping to run a two week summer school in the Engineering Department in Trinity College Dublin. Run over the past number of years under the supervision of Professor Kevin Kelly, the head of the Engineering with Management course, the aim of the summer school is to bring more girls into STEM, with a particular focus on engineering. It is an intensive program; we typically take in about 12 secondary school girls from 4th and 5th year, and we look for those who have not yet decided what area they will study in. Students are invited to partake on the basis of ability, rather than pre-existing motivation. As a result, 'don't know' and 'maybe' students are invited in preference to those who already have strong inclinations towards studying engineering.

To that end when we are recruiting volunteers for the summer school (we generally recruit amongst our 2nd/3rd year engineering students) we seek those who stand out as motivated by wanting to implement change, who are passionate about engineering, and who we believe to be highly competent in expressing these passions to others. We are looking for leaders amongst our students who can create, direct and teach activities for the summer school to a very high standard; those who can engage others, and who can work well with others. In these regards, Tyron has been one of the outstanding interns we have had over the course of the program. He was recruited for the 2015 summer school, and immediately I saw he cared very much about doing the best work possible, holding himself to a notably high standard, and putting in an incredible number of hours (the interns work for weeks before the summer school itself designing, creating and refining our activities, along with handling much of the administrative and overall project planning of the summer school). He believed in what the summer school set out to achieve, and this showed in his output, in his attitude, and in his ability to motivate those around him to do their best possible work. During the running of the summer school itself his organisation, teaching, and engagement with the students were exceptional.

Shortly after this particular summer school ended I became involved in the setting up of a novel facility within the Mechanical Engineering Department in TCD; a student developed, student run, student led rapid prototyping facility, which we called BuildBase. The students at this time had very limited access to facilities to fabricate for themselves, and very little freedom within that limited access. With BuildBase we planned to offer users the freedom to use a variety of equipment and resources to create whatever they chose for project or personal use. 3D printers and scanners, modelling software, power and hand tools, materials and workspaces were all to be made available. Users were to be trained in how to use the equipment, including how best to design and produce their 3D prints. Students were to operate and manage the facility at every level.

To help get this project off the ground and ensure its successful handover to a student council after year one I wanted to put in place a team of student coordinators that would best enable us to develop, refine and implement the facility. Tyron was the first student I thought of to help me with this. He was in his fourth year of studies, and I knew it would be a big commitment from him to volunteer, but he agreed right away. During this first year, Tyron helped develop the training program for students and trained the majority of new users, which totalled over 100 by the pilot schemes end. He also undertook the oversight of the facility and helped with operations, planning, and refinement throughout the scheme.

During this setup year it became clear to me that the best possible scenario for the continued operation and development of BuildBase would be to have Tyron take over as the chair of the council who would run the facility after I left; his ideas and his work were excellent, his engagement was total, and his leadership abilities were highly apparent. He could deal with any issues that arose, communicate well with his team and the department, and envision and plan for the best interests of the facility, and the students who availed of it. He readily agreed to take on this demanding role.

BuildBase has become a great success in our department, inviting huge interest from other departments and schools in Trinity, and from other universities and colleges. Students who are a part of it are more capable of innovating and bringing their ideas to fruition, and the students who help run the facility are much more capable of conceiving, designing, implementing and operating projects for themselves. I know a large part of the reason Tyron is involved with the project is because it has such a great influence in actively and positively progressing our student's abilities to be empowered, innovative and creative into the future. Also, he often expressed interest in learning how to get such projects up and running and in how to ensure they are viable. I think he has given and learned a huge amount in regards to BuildBase, and it will stand him in great stead in any future endeavours he embarks on.

Finally, if I may say: I worked with many students whilst developing the facility; all contributed but none so much as Tyron. I value especially his ability to get to the heart of a problem, to bring about solutions that encompass all parties involved in BuildBase. He is a very honest person, of exceptional integrity. I knew when Tyron said he would work on something it would be done, and done well; he was effectively running the facility by the end of the first year, and I was highly confident the handover would be a success, and it has been. All this he carried out (and continues to carry out) voluntarily whilst engaged in his studies. In anything he has done whilst I have known him he has had huge positive impacts. An exceptional candidate by any measure; I hope I have been able to present him as such, and I hope you look favourably on his application.

Please feel free to contact me by email or by phone if you require any further assurances: mchughmp@tcd.ie and 0863175293 respectively.

Yours Sincerely,

Mike McHugh.