
Ironman Image Throw Thingy
by
CSIR
Proposed by
Vector Software Developers

A TENDER DOCUMENT FOR THE CONSIDERATION OF THE
CSIR IRONMAN IMAGE THROW THINGY PROJECT

4 MAY 2015

EDITED BY

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*The University of Pretoria
Computer Science Department*

Summary



I am a very driven person with very clear goals in terms of my career as

well as my personal life. I believe in honesty above all else and making a valuable contribution towards society. In my opinion, one of the greatest injustices that can be done by man, is refusing to pass on what one has learnt and experienced, for without this happening there can be no progress. My dream is to be remembered for the feats that I had accomplished in my lifetime. I am extremely passionate about

technology, specifically software development, which is the reason why I chose to study Computer Science at a tertiary level. I am particularly fond of new challenges that test my abilities allowing for growth, self-improvement and the improvement of others. My family and friends are an extremely important factor in my life and I would see them proud of the man that I am, and want to be.

Experience

Barone, Budge & Dominick (Pty) Ltd

Bursar

BBD implements and maintains complex business systems. A customer with a requirement for custom software, which must fit into their business, and must meet the business goals approaches BBD with the goal in mind of obtaining a software solution thereof.

HOUGHTON ESTATE, JOHANNESBURG

Jan'15 – present

University of Pretoria, Computer Science Department

Teaching Assistant

As a teaching assistant for Data Structures and Algorithms, Netcentric Computer Systems and Software Modelling it is expected of one to have a good understanding of design patterns, general algorithm implementations and data structures in the Computer Science field as well as knowledge of web development and other networking related software development.

HATFIELD, PRETORIA

Jul'14 – present

Dynamic Visual Technologies

Junior Software Developer

DVT is a software development and related services business. They build, implement and support software, and provide those services that ensure business concepts are clear, that practical needs are met, and that software is written to specifications.

HYDE PARK, JOHANNESBURG

Nov '14 – Jan'15

Technical Skills

Technical expertise: Software design and implementation. Big fan of Agile methodologies. I regularly utilise Java/C++, yet flirt regularly with C#. Proper knowledge of web technologies: HTML+CSS, XML, REST, .NET and JavaScript (including WebGL). Elementary knowledge of Artificial Intelligence related methods, such as optimisation problems.

Natural languages: Afrikaans (*mother tongue*), English (*full professional proficiency*), French (*elementary proficiency*).

Interests

Non-exhaustive: Online gaming, running, music, reading, travel, foreign cultures, most things French related, cooking, open source movements, software development.

Non - Technical Strengths

Social skills: I believe myself to be a rather "likeable" person, meaning I am very seldom found to be antagonistic towards others. I am a people person. I enjoy meeting and spending time with new and interesting people.

Professional skills: In a professional working environment I strive to be a very punctual, concise and informed individual. My approach towards professionalism relies on the concepts of honesty, determination, perseverance and most of all proper communication.

Why CSIR Ironman Image Throw Thingy?

Because: I am very interested in mobile development, particularly for Android devices. New and innovative project like this one really interest me, since I am an avid follower of new technological advancements. This is a very visual project, I enjoy developing things where the results are clearly visible and can be appreciated.

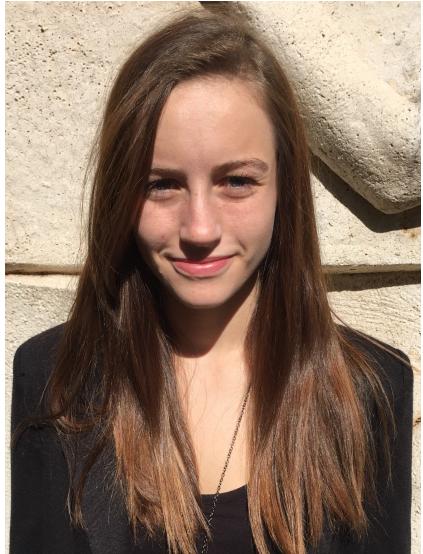
Michelle Swnepoel

February 1, 1994

Last update on May 4, 2015

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Summary



I see myself as a person who is invested in my personal growth in all aspects of my life. I am currently double majoring in Computer Science and am still deciding whether I want to do honours degree next year or start working. When I feel everything around me is going to fast and that I need a getaway, I will most definitely grab the book I'm currently reading and enjoy a few pages. I also enjoy watching series, building puzzle and playing 30 Seconds with my mom and sister - and always a cup of coffee. One of my other passions in life is dogs and animals in general. Close friends and

family see me as a person who is diligent, respectful, sincere, modest and compassionate. I am an introvert, but enjoy observing and getting to know new people. I get my energy by accomplishing something that I had to work hard for and working with people.

Experience

University of Pretoria, Computer Science Department

Teaching Assistant

HATFIELD, PRETORIA

Feb'14 – Jul'14 and Feb'15 – present

I was a teaching assistant for a Introduction to Computer Science module, where it is needed to understand some basic concepts underlying computer science. I am now a teaching assistant for Data Structures and Algorithm, which requires the understanding of advanced data structures.

Technical Skills

Technical expertise: Java, C/C++, assembly, CSS, HTML, JavaScript (also WebGL), XML, PHP, AJAX and jQuery

Natural languages: Afrikaans (*home language*), English.

Interests

Non-exhaustive: I enjoy reading books, mostly fiction. Spending time with my family and friends is one of my favourite activities and also to go to new places to explore. The human way of living interests me and I enjoy reading up on it.

Non - Technical Strengths

I consider myself as someone with good communications skills, enjoying it to work with people. I will always be open to new experiences and opportunities. Honesty is important to me, thus I will always be be open and trustworthy. I am also someone who grasps a new topic quite quickly. These strengths are propagated throughout my social and professional life.

Why CSIR Ironman Image Throw Thingy?

Because: When I read the project proposal for the first time, the idea immediately jumped out to me. It sounds like a fun project to do as a team and something we can be proud of afterwards. Even though the project will challenge me and I will have to learn some new technologies and skills, it sounds still within in reach for us as a team to accomplish.

Kale-ab Tessera

December 8, 1994

Last update on May 4, 2015

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House Boekenhout • LC de Villiers Campust • Hatfield • Pretoria

Summary



Ambitious programmer with strong

leadership and relationship skills. Fort zone. Adaptable and very open to learning new programming languages and methodologies, in order to build on previous knowledge. Hardworking yet still innovative. I try to live a life with as many experiences as possible because I believe we can only learn and grow from things that challenge us. I am uncomfortable in my com-

Experience

University of Pretoria, Computer Science Department

HATFIELD, PRETORIA

Teaching Assistant - COS 110

july 14 – dec 14

As a teaching assistant for Program design and Programming techniques good knowledge of object-oriented (OO) programming. Concepts including inheritance and multiple inheritance, polymorphism, operator overloading, memory management (static and dynamic binding), interfaces and encapsulation.

University of Pretoria, Computer Science Department

HATFIELD, PRETORIA

Teaching Assistant - COS 212

feb 14 – present

As a teaching assistant for Data Structures and Algorithms it was crucial to identify and recognise all the classical data structures; implement them in different ways; know how to measure the efficiency of implementations and algorithms; and have further developed their programming skills, especially with recursion and polymorphism.

Boekenhout Res

HYDE PARK, JOHANNESBURG

House Committee Member, Secretary, Head of IT and Communications

aug 14 – present

Helped lead various res students and mentored those with difficulties. I was also expected to solve technical difficulties such as problems connecting to the internet and also managing of social media.

Technical Skills

Technical expertise: Proficient in Java, C++ and html. Experience with Assembly ,C, sql and delphi. Well-equipped in data structures and algorithms

Natural languages: English (*full professional proficiency*)

Interests

Non-exhaustive: Keeping fit, playing tennis and soccer, dancing, cooking, technology trends , music, foreign cultures, software development and application of artificial intelligence

Non - Technical Strengths

Social skills: I believe I am a born-leader and this has resulted in various leadership positions whether it be highschool, residence or the university. I am also quite easy to get along with due to my friendliness and communication skills.

Professional skills: In a professional working environment I am self-driven and willing to work as hard as is required. I also strive to be very respectful,punctual and diligent in anything that I do.

Why CSIR Ironman Image Throw Thingy?

Because: Not only am I interested in the obvious visual factors of this project, I am also interested in incorporating various technologies together. This project will be a challenge, but a rewarding one. Once completed, it will be used lecturers. Students and even for recreational purposes like watching movies. I want to be involved in working with software which has so much to offer the world.

Keagan Thompson April 16, 1994

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Last update on May 4, 2015



I am first and foremost career-driven. My primary aspirations in life are reaching for the highest branches of my career and having a healthy family lifestyle. While enjoying all aspects of life as a student, I still strive to always consider my future suc-

cesses in society and the impact that any actions I commit may have on others as a result. Whilst acknowledging that it is necessary to help others to the best of my ability in advancing their own lives, I take a larger interest in ensuring a secure, comfortable lifestyle for myself. The technological environment has captivated my interest from a very young age and my fixation on developing technology that will help the human race in experiencing a more enjoyable life is a testament to that. It is through software development that I hope to leave my legacy in this world, since I see this as the most ef-

fective way for myself to leave this world in a better state than I found it. I am eager to tackle new challenges and pride myself on the fact that I am always able to find a solution to a problem. It is for this reason that I can describe my approach to programming using the expression "Where there is a will, there is a way". Although I am confident of my abilities as a software developer, I respect the fact that there are people who have a much broader knowledge of the field than I do and am willing to learn from these people in order to further my own experience.

Experience

Barone, Budge & Dominick (Pty) Ltd

Bursar

BBD implements and maintains complex business systems. A customer with a requirement for custom software, which must fit into their business, and must meet the business goals approaches BBD with the goal in mind of obtaining a software solution thereof.

HOUGHTON ESTATE, JOHANNESBURG
Jan'13 – present

Technical Skills

Technical expertise: Software development aspects including software design patterns, data algorithms and programming fundamentals (Novice). I have experience in Delphi (4 years), Java (3 years), C# (3 years), C++ (1 year) and SQL (2 years). I also have a wealth of experience with web technologies such as HTML, XML, and JavaScript (Angular, NodeJS, BootStrap, jQuery). Additionally, I have a moderate knowledge of various Artificial Intelligence concepts and an extensive experience in Information System modelling.

Natural languages: English (*mother tongue*), Afrikaans (*full professional proficiency*), Greek (*elementary proficiency*).

Interests

Non-exhaustive: Technology, Sports (Rugby), Socialising, Outdoors, Gaming, Travelling

Non - Technical Strengths

Social skills: I am a person who has a witty sense of humour. I see myself as the forerunner of my group of friends and am always keen to organise a get-together at my place of residence. In terms of meeting new people, I portray my true self because I believe in always being who I am, and I have been in contact with many different kinds of people so I have a good understanding of communication with most people.

Professional skills: I always try my best to be punctual and to have work completed by the deadline as this is the only way a group will be able to complete a project effectively and I like to consider actions carefully in conflict situations rather than force my own ideas upon others.

Why CSIR Ironman Image Throw Thingy?

Because: App development is one part of IT I have yet to get into properly and since it is becoming a big part of the technological world today, I hope to use this project as an opportunity to expand my knowledge in this respect. I also wanted to do a project that would push my boundaries a lot and this Iron Man project seems like the most futuristic one.

1 Project Execution

1.1 Client-Developer Communication

Even though we as a team will be able to work independently, we do acknowledge the need to be in contact with the client in order to keep him/her informed. We are flexible in terms of which technologies to use if it is not possible to meet physically. Skype, WhatsApp, Google+ Hangouts and E-mail are some of the various ways of communicating which we are comfortable with. We will always make sure to keep the client in the loop of our project, whether this is by physically meeting or by using digital communication. If it is needed to physically meet with the client, we will always schedule the meeting far ahead and will be reliable in terms of showing up on time, etc.

1.2 Ideas and Technologies

1.2.1 Technologies to be Used

After due consideration and taking into account the received requirements, the following technologies will possibly be used:

In order to develop the back end of the system (API and Web Server):

- ASP.NET MVC 5
This will be used to develop the back-end of the system, using Microsoft's Visual Studio IDE.
- ASP.NET Web API
This will form the back-bone of the API with which the rest system will interact (possibly hosted in the cloud).
- C#
Will be used in conjunction with .NET development.

For the mobile app:

- Xamarin or Android Studio
The decision has yet to be made on whether the C# Xamarin approach will be used or the traditional Java in Android Studio approach, to develop an Android application. One of these two will however reign supreme.
- Open Source Libraries Open Source Software such as GPSTracker by nickfox (github), can be used to track the phones location and this can then later be used to specify which screen the image should be cast to.

1.2.2 Implementation Ideas

In order to develop the back end of the system [API]:

- One could do hosting in the cloud with the Microsoft Azure hosting platform - As students we would have access to many Microsoft products by registering at www.dreamspark.com

The Repository Pattern as well as IoC (Inversion of Control) can be implemented. Another possible pattern that could be investigated is the Unit of Work pattern.

1.2.3 Project Extension Ideas

The following was considered as possible future extensions on the current project specifications:

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1.3 Deliverables

1. Original Tender Document
2. Requirements Specification
3. Architecture and Design Document
4. Developer's Guide
5. All Source Code