
Eaves Dropping Protection in Conclave

by

CSIR

A TENDER DOCUMENT FOR THE CONSIDERATION OF THE
CSIR EAVES DROPPING PROTECTION IN CONCLAVE PROJECT

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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, .NET, REST 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 Eaves Dropping Protection?

Because: I am very interested in mobile development, particularly for Android devices. I feel this project is very applicable to modern day life and can actually make a difference in people's lives. Privacy is a very big issue in modern times, and it is something that I care a great deal about.

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 and 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 Eaves Dropping Protection?

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.

1 Project Execution

1.1 Ideas and Technologies

1.1.1 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):

- NodeJS
Node JS is a very popular web server hosting technology at this moment due to its reliability, scalability and speed.
- Express Framework
This framework will be used in conjunction with Node JS.
- JavaScript front-end frameworks such as Bootstrap
This will be utilised for the GUI of the web server - simplistic, concise yet professional.

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.
- Near Field Communication (NFC)
NFC is a very important part of this project. Luckily it is not necessary to reinvent the wheel. NFCTools is a collection of libraries and tools for NFC in Java. The targeted devices are desktop Reader/Writer and Android smart phones. These libraries are open source and available for use in a project such as ours.

1.1.2 Implementation Ideas

The project, from a development point of view, can be regarded as consisting of three individual parts.

1. Malware component

Since malware should technically not be known to the user as being installed, some research will need to be done on how to hide an app from a user, as well as getting the malware installed on the user's device without the user's proper consent and knowledge.

2. Android App using NFC Component

The most challenging part of this component will most probably be the NFC interaction and user identification.

3. Web Server / GUI Component

In order for the android app to communicate with the server, some sort of hosting solution will need to be investigated. There are however many freely available service for Node hosting.

1.1.3 Project Extension Ideas

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

• Direct upload to server

Instead of the malware sending the voice recording by email, one could perhaps use a server using some form of encryption and a very specific communication protocol which would then deter authorities to send fake data to the receiver in order to catch the culprit. One could perhaps disguise it in the form of something that looks quite normal, like uploading it to DropBox.