**HARMON SINGH**

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**Summary**

Current project engineer looking to change industries. Interested in an environment that will encourage innovation and continued growth. Eager to be exposed to anything that is interesting.

**Employment History**

Oct 20 - Present **Graduate Project Engineer**

Adani Mining, Townsville

* Applied a range of engineering project management tools and procedures as a basis for planning, organising and managing resources to support projects including on-site coal lab and independent diesel generator power stations.
* Built my understanding of the structure, roles and capabilities of the engineering workforce through inquiry questioning and observation to maximise the work of the individuals and as a team.
* Understand and apply relevant standards and codes of practice, as well as the legislative and statutory requirements which underpin practical and technical work.
* Studied quality assurance and commissioning teams; understood troubleshooting, safe testing practices and documentation
* Worked with electricians, supervisors and leading hands during construction phase of project while working on installation of diesel generator stations, office complexes, conveyors and the wash plant.
* Conducted on-site safety reviews with sub-contractors on monthly basis to meet KPIs as the client representative.
* Represented the business in critical hazard safety reviews both on-site and online, communicating with key stakeholders internally and externally.
* Reviewed and refined construction methodology to identify constraints, risks and opportunities.
* Demonstrated effective oral and written communication by expressing information effectively and succinctly, issuing instruction, engaging in discussions, presenting justification with a range of personnel using a variety of modes.
* Demonstrated commitment to critically self-review my work and seek feedback from project lead to monitor my learning needs, managing time and processes effectively, while prioritising competing demands to achieve project goals and objectives.
* Maintain professional working relations with clients, stakeholders, as well as with colleagues across wide ranging disciplines.
* Gained cross disciplinary experience in civil and earthworks while supervising road works and batch plant operations.
* Automating time consuming tasks using Excel and VBA scripting, these spreadsheets have been used throughout the business to report safety statistics and manage contractor costs without additional labour.
* Enhanced safety management system user interface and functionality to increase participation within the business.

Jan 20 - Mar 20 **Project Lead - Research and Development**

Bitcoin BCH, Townsville

* Conducted research on the ability of the Raspberry Pi to perform processes that are seen to require higher performing hardware, operating software was Linux in conjunction with Docker to simulate multiple wallets for test environments.
* Development and implementation of a test environment for full-nodes to test throughput of transaction verification speed.
* Established an online community and manage website design and deployment for advertising of project milestones, roadmaps, guides for users to follow the project and program to engage community into facilitating development.
* Improved adoption in the chosen cryptocurrency, bitcoin cash (BCH) in Townville which has been labeled bitcoin cash city by attending events, approaching local businesses and marketing its ease of use and potential for growing their business

Oct 19 - Jan 20 **Graduate Electrical Engineer**

Orana Engineering, Townsville

* Learnt general engineering and drafting principles for mid-sized electrical projects.
* Completed power reticulation and safety design using PTW as well as drafting redlines and mark ups from clients and project leads using AutoCAD.
* Communicated with clients and vendors for capital estimates, functional descriptions and reviewing scopes of work.

Mar 18 - Dec 19 **IS&T Service Desk Level 1 Technician**

Glencore Copper Refinery, Townsville

* Provided first contact technical expertise over the phone using remote desktop connection. This included writing and using documentation to resolve regularly occurring incidents and requests from users to make sure that analysts are up to date.
* Performed critical tasks in a high pressure and fast paced environment to satisfy users and ensure application stability
* Designed, developed and implemented an improved user account creation in active directory using PowerShell scripting.

June 18 - Dec 19 **Developer of Parking Management System**

James Cook University, Townsville

* Worked within a team to identify an issue and conceptualise, design and implement a parking system which encompassed technical usage of image processing, machine learning, embedded system circuit design and web/mobile application design.
* Produced a unique algorithm using transfer learning on an existing model of Mask R-CNN to detect objects of interest.
* Managed risk of system failure to eliminate any third party maintenance by redesigning and refining design of systems interface, code and hardware.
* Drove consultations with potential clients at the university, council and hospital for potential commercialization; with the university implementing the design with 98% availability across three on-street and off-street parking lots.

Feb - Oct 18 **Undergraduate Thesis Project**

**“Development of Computer Application for the Detection of Plagiocephaly (flathead syndrome)”**

* Explored image processing techniques for object segregation (Sobel, Gaussian, morphological processing) using Matlab
* Produced an algorithm with Mask R-CNN to detect the object of interest within an image and then calculate to specific values which were accessible via an API for mobile applications.
* Developed a mobile application using Android Studio to interact with an API made with Node.js (express).
* Algorithm deployment included knowledge of nVidia packages cuDNN; usage of tensorflow, pytorch and sk-learn.

**Projects**

Sept 20 - Present **Mobile Applications with React Native**

Personal Project

* Designed three ‘clone’ applications including Instagram, Zoom and Uber.
* Early stage development of freeGPO an app that shows free powerpoints.

Jul 19 – Oct 19 **Robotic Hand**

Personal Project

* Project goal was to create a glove that could track a hand for modeling in 3D space.
* Communicated with multiple IMUs using I2C to model a hand using an Arduino for processing.

Jul 18 – Nov 18 **Wireless Weather Station**

University Project

* Designed a commercially viable product from whiteboard to physical.
* Designed a PCB and schematic using Altium, created a website to interact with data and documentation for users.

Jul 19 – Oct 19 **5GHz Oscillator**

University Project

* Project goal was to design a device that could take a 50Hz AC to DC then to a 12V 5GHz square wave.
* Initial design using microwave office and microcap; PCB and schematic design using Altium.

**Education**

2015 – 2019 Bachelor of Engineering (Honours) majoring in Electrical & Electronic

Bachelor of Information Technology

*James Cook University*, *Townsville*

**Professional Associations**

Member of Engineers Australia

Contributor to FNQ Sikh Project working with Extent Heritage and National Sikh Trust

Member of Institute of Electrical and Electronics Engineers

**Technical Skills & Experience**

**Computing Languages** Python, Java, C/C+, MATLAB, VHDL, JavaScript, C#, SQL, PHP, PowerShell, HTML, CSS, Solidity

**Instrumentation** Data Loggers, Small Scale Biometric Sensors, Self-Powered Electronics

**Design** Altium, Microwave Office, Solidworks, AGI, AutoCAD, Android Studio, PowerTools (PTW), Photoshop, Quartus Prime, ModelSim

**Software, Tools & Libraries** Arduino, Linux, Raspberry Pi, Node.js, GitHub, Matlab, Kinetis, Tensorflow, Pytorch, Kivy, Flask, React, React-Native, Amazon AWS, Vagrant, Docker, Wordpress, PostgreSQL, MongoDB, MySQL, Apache, Travis CI, Azure Fundamentals

*References available on request*

**Academic Transcript**

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| --- | --- | --- |
| **Year** | **Subject** | **Grade** |
| 2019 | CP3402 Content Management Systems | C |
|  | CP3403 Data Mining | D |
|  | CP3406 Mobile Computing | D |
|  | CP3408 Game Engine and Simulation | HD |
|  | CP2409 Network Forensics and Data Communications | C |
|  | CP3404 Information Security | C |
|  | CP3407 Advanced Software Engineering | C |
|  | EG4013 Asset Management, Maintenance and Reliability | P |
| 2018 | CP2404 Database Modelling | C |
|  | EE4000 Signal Processing 3 | C |
|  | EG4011 Thesis Part 1 of 2 | C |
|  | PH3019 Electromagnetic Phenomena | P |
|  | EE4400 Power Engineering 3 | P |
|  | EE4500 Electrical and Electronic Engineering Design | C |
|  | EE4600 Automatic Control 3 | C |
|  | EG4012 Thesis Part 2 of 2 | C |
| 2017 | EE3001 Signal Processing | P |
|  | EE3300 Electronics 2 | P |
|  | EE3700 Communications Systems Principles | P |
|  | EG3000 Engineering Project Management | P |
|  | CC3501 Computer Interfacing and Control | C |
|  | CP2406 Programming II | D |
|  | EE3400 Power Engineering 2 | P |
|  | EE3600 Automatic Control 2 | D |
| 2016 | CC2510 Digital Logic and Computing Methods | C |
|  | EE2201 Circuit Theory | P |
|  | MA2000 Mathematics for Scientists and Engineers | P |
|  | PH2019 Introduction to Electromagnetism Optics and Early Quantum | P |
|  | CC2511 Embedded Systems Design | C |
|  | CP1402 Internet Fundamentals | HD |
|  | CP1404 Programming | D |
|  | EE2300 Electronics 1 | C |
| 2015 | EG1000 Engineering 1 | D |
|  | EG1002 Computing for Engineers | HD |
|  | MA1000 Mathematical Foundations | P |
|  | PH1005 Advanced Stream Physics | P |
|  | EG1010 Process Engineering | P |
|  | EG1011 Statics and Dynamics | C |
|  | EG1012 Electric Circuits | C |
|  | MA1003 Mathematical Techniques | C |