Benson Coelho   Engineer & Full-stack Developer

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Summary

Full-stack Web Developer drawing on an extensive engineering background to build elegant, scalable and solution-driven web applications with an intuitive user interface.

Employment Overview

2012 – Present	Senior ESD Engineer, Setmetrics
2008 – 2011	Power Systems Engineer, Hayat Communications

Relevant Experience

Senior ESD Engineer – Setmetrics   2012 - Present

Responsibilities

- Provided engineering input to the energy modelling software and web interface development process
- Developed prototype energy modelling software and tested final release versions
- Created and calibrated complex thermal models of existing buildings for retrofit assessments, operational diagnostics and controls optimisation
- Conducted thermal model-based optimisation of HVAC controls for new-builds
- Conducted indicative NABERS energy ratings and prepared sustainability reports
- Trained and mentored junior ESD engineers

Accomplishments

- Developed an auto-calibration technique based on an existing generic optimisation program
- Developed a platform to perform auto-calibration of energy models and optimisation of design and controls based on genetic algorithms, allowing a much higher degree of flexibility than existing platforms
- Managed the development of engineering and reporting productivity tools that greatly reduced the number of hours spent on related tasks.
- Contributed to the identification of a number of bugs and potential enhancements in the Energyplus building simulation software by engaging with engineers and researchers at GARD Analytics and Lawrence Berkeley National Laboratory, USA

Power Systems Engineer – Hayat Communications   2008 - 2011

Responsibilities

- Supervised installation of power, cooling and monitoring systems for Wataniya Telecom, Kuwait
- Conducted on-site testing and commissioning of power systems and monitoring/alarm systems
- Managed engineering services relating to passive network elements
- Supervised and trained field technical staff
- Responsible for maintaining network availability within the SLA
- Monthly reporting of network health, recurring issues and outages

Accomplishments

- Recommended a series of measures that contributed to maintaining SLA performance during peak periods
- Designed and installed a partial load disconnection upgrade to reduce outage in the event of power failure
- Assisted in design and implementation of a regional first hybrid power system for off-grid BTS sites
- Designed and installed a cost-effective fuel theft detection system for off-grid sites

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Education

Monash University, Melbourne   Victoria, Australia
Coding Bootcamp, Full-stack Web Development   10/2020

University of Melbourne, Melbourne   Victoria, Australia
Master of Environment: Energy Efficiency Modeling and Implementation   12/2013

Visveswaraiah Technological University, Belgaum   Karnataka, India
Bachelor of Engineering, Mechanical   07/2007

Skills Summary

Web development skills
- Experience with front-end technologies and frameworks including HTML, CSS, Bootstrap and client-side JavaScript
- Skilled in server-side and database technologies including JavaScript, Node, Express, Handlebars, SQL and MongoDB
- Demonstrated expertise in building web applications with an elegant, responsive front-end and a robust, modular back-end
- Extensive applied knowledge of various programming languages and data analysis frameworks including JavaScript, R and Python

Engineering skills
- Experience with energy modeling platforms including IES, TRACE, Energyplus; Highly skilled in Energyplus
- Experience with energy rating tools including NABERS and Green Star
- Experience with relevant standards and codes including NCC-Section J, ASHRAE Standards 90.1, 189.1, 55, 550/590, Australian Standards 1668, 1680
- Applied knowledge of optimization algorithms and techniques and an understanding of the practical challenges and limitations
- Ability to identify repetitive patterns in complex tasks; Interest and demonstrated ability to automate

General Skills
- Can communicate effectively in a formal business environment
- Able to explain concepts using appropriate language (technical or non-technical).
- Excellent problem solving and time management skills
- Personable and articulate, able to work effectively in a multi-cultural and multi-disciplinary team
- Demonstrated research and application skills

Certifications and Professional Affiliations
- Certified ASHRAE BEMP (Building Energy Modeling Professional)
- Member of AIRAH and IBPSA Australasia

Professional Development
- Authored two chapters of the proposed AIRAH Simulations DA Guideline in collaboration with the AIRAH ESD Special Technical Group and IBPSA Australasia
- Undertook courses and self guided study in statistical analysis, programming and machine learning in R and Python
- Committed to staying informed about and proficient in the latest developments in building simulation

Referees
Referees are available upon request.