Sandesh Chhetri

E-mail: sandesh.chhetri@cqumail.com
Mobile: (04) 2755 8241
LinkedIn: linkedin.com/in/sandesh-chhetri/

CAREER OBJECTIVE

Engineers Australia certified professional engineer seeking to leverage expertise in power system modeling and electrical design to attain Registered Professional Engineer of Queensland (RPEQ) status.

SKILLS & KNOWLEDGE

Software: ETAP, Paladin DesignBase, PSS®E, CDEGS AutoCAD, Revit, Navisworks, Dialux, Microsoft Office Suite, Python others as relevant.
Standards: AS/NZS 3000, AS/NZS 3008, NCC, IEC 60909, AS 1680, AS2067, IEEE 80, Department of Defence MIEE

WORK EXPERIENCE

Hatch **Jun. 2023 – Present**
Electrical Engineer Brisbane, QLD
Involved in Kemerton Lithium Hydroxide Plant expansion project, Australia's largest lithium processing plant.

- Developing automated design workflows using Azure Machine Learning and PowerApps to streamline load list and cable schedule updates, reducing project time by significant hours.
- Perform internal review markups on single-line diagrams and cable block diagrams to guarantee adherence to design standards, ensuring project quality and compliance.
- Conducting load flow and short-circuit faults studies in site wide 22kV distribution rings with MV/LV motor control centers for enhanced system reliability and equipment performance. Ultimately feeding fault outputs for protection co-ordination, earthing design and arc flash analysis.
- Collaborating with modeling teams and lighting vendors to carry out lighting/photometric calculations to verify adequate lux levels and maintain MTOs for accurate procurement and cost control.

Aurecon **Mar. 2022 – Jun. 2023**
Electrical Engineer Townsville, QLD

- Analysed load profile data for various Australian Military bases using MS-Excel and Python to develop comprehensive reports. Collaborated with the project delivery team to inform infrastructure design decisions and capacity planning.
- Performed load flow study for the Kokoda Barracks 11kV distribution ring under different contingency scenarios identifying abnormalities such as equipment overloading, excessive voltage drops and poor power factor. Carried out short-circuit study in accordance with IEC60909/AS3851, providing detailed report explaining input data, study cases, observation on power system equipment fault ratings and recommendations.
- Performed a detailed rooftop solar pre-feasibility study at The Lavarack Barracks (Northern QLD), analyzing potential energy generation, payback periods, and grid integration strategies. Provided actionable recommendations that were incorporated into the Electrical Master Plan.
- Created comprehensive engineering designs and drawings for diverse medium/low voltage electrical system projects. Scope included lighting design (AS1680), cable size calculations (AS3008), equipment installation, and maintenance planning.
- Carried out hold and review point testing and commissioning of LV sewage motor pumps. Approved inspection test reports on motor switchboard, cable insulation and continuity, earth loop impedance, RTUs etc.

Fitzroy River Water (Rockhampton Regional Council) **Mar. 2021 – Jun. 2021**
Electrical Engineering Intern Rockhampton, QLD

- Analysed submersible pump SCADA data using MS Excel to develop algorithms for predictive blockage detection.
- Performed firmware testing, validation, and modification of RTUs within a new SCADA telemetry network, ensuring seamless integration and communication for system control.
- Collaborated with operations engineers to develop and test control algorithms for variable speed drives, contributing to optimization research for pump station efficiency.

EDUCATION

Master of Engineering (Electrical) **Jul. 2019 – Jul. 2021**
CQUniversity Rockhampton, QLD

Bachelor of Engineering (Electronics and telecommunications) **Oct. 2014 – Nov. 2018**
Pashchimanchal Campus, Institute of Engineering Pokhara, Nepal

PROJECTS

Long Haul Optical Fibre Network

- Implemented a long-distance fibre optic network in VPI Photonics Design Suite, including calculations for fibre optic attenuation, bit error rate, and power budget.

Optimisation of Filter Transfer Function Using Genetic Algorithm

- Developed a genetic algorithm in python for maximisation of polynomial transfer function coefficients of an analog filter.
- Achieved the target frequency response of the second-order low-pass filter with response better than the butter-worth filter response in the passband region.

Load Frequency Control

- Derived the transfer functions of the governor, turbine, and generator with the provided data using system identification tool in MATLAB.
- Designed and tuned a continuous PID controller and then developed a discrete PID controller accordingly with the bilinear transformation method.
- Simulated the whole project in Simulink.

VOLUNTEER WORK

Central Queensland Innovation and Research Precinct (CQIRP) **Jul. 2020 – Aug. 2020**

- Explored machine learning approaches for assessing mango crop quantity and quality. Primarily worked on data classification of mango fruits.

CERTIFICATIONS AND TRAINING

Professional Graduate (GradIEAust), "Engineers Australia" **Jul. 2019 – Current**

Outsmarting intermittency, École Polytechnique, Coursera **Nov. 2021**

- Learned upcoming grid challenges for renewable energy sources like wind and solar.