Muthukrishnan Anand

University of Alberta, No. 37, 3-336 Donadeo
Innovation Centre for Engineering,
Edmonton, Alberta, Canada T6G 2E1

https://bit.ly/mk-personal-website
muthukr1@ualberta.ca
linkedin.com/in/muthu-krishnan1/

Objective

I am currently pursuing a graduate program in Chemical Engineering to deepen my expertise and contribute to research in carbon capture and sustainability. With 5 years of industry experience in upstream process monitoring, troubleshooting, process simulation, and advanced data analytics, I aim to leverage my skills to drive innovative, data-driven solutions in the field of sustainability.

Work Experience

Process surveillance engineer, ExxonMobil Canada Energy, St. John's, Canada **Dec`22 – Aug`24**

Provided onsite technical support for Hebron operations as the system owner for oil processing and utilities systems, focusing on troubleshooting, process optimization, and identifying opportunities for asset modifications and improvements.

- **Implemented** viscosity reducing agent chemical trial, providing an additional uplift of **3.5kBd** for Hebron.
- **Developed risk-based maintenance/sparing philosophy** workflow for control valves yielding an overall risk mitigation worth **11.7M$** for Hibernia.
- **Project lead** on MPG#A exhaust stack remediation for Hebron involving collaboration with operations, third-party vendors, and structural departments for a total project value of **US$1.7M**.
- **Commissioned and optimized** pioneering 3 phase level technology measurement system for Hebron (Electric Tomography), working in conjunction with subject matter experts and third-party vendor.

Process Surveillance Engineer, ExxonMobil GBC, Bengaluru, India **Jun`19 – Nov`22**

Deliver process surveillance workflow support to different upstream operations for maximizing business value.

- **Point of contact** for process engineering in the **cross-functional initiative** of maintenance transformation aimed at **reducing maintenance effort by 4000-man hours** for Hebron (Canada).
- **OPEX reduction** of **US$ 50k/yr.** is realized by gas lift optimization study by investigating TEG losses and establishing baseline performance for Hibernia (Canada).
- **Sensitivity analysis** utilizing **HYSYS simulations** for Bonny River Terminal (Nigeria) resulted in **minimizing GHG emissions** by **30%** and **power savings** of **2MW**.
- **Realized cumulative savings** of **4.2M US$** from insights generated through workflows for East Asia Platform (Nigeria).

Achievements

- Awarded **University of Alberta Graduate Recruitment Scholarship** and **Capt. Thomas Farrell Greenhalgh Memorial Graduate Scholarship** in 2024.
- **Smt. G.S. Rajalakshmi Memorial Award Citation** for securing third rank in bachelor's course in 2019.
- Completed **Early Career Milestone (ECM)** in Process Engineering (2022).

Skills

- Process Simulation: Aspen HYSYS, HTRI and Promax
- Languages: English, Tamil and Hindi
- Programming: Python, MATLAB, HTML and C++
- Data Analytics: SEEQ, SAS JMP, AVEVA PI and PowerBI

Education

National Institute of Technology, Tiruchirappalli (NIT Trichy) **Jun`19**

Bachelor of Technology (Hon.) - Chemical Engineering **CGPA 9.39/10**

Research Experience

Undergraduate Thesis, National Institute of Technology, Tiruchirappalli, India **Jan – Apr`19**

- Conducted literature review on grade-2 biorefinery concept and 2,5-Furan Di-Carboxylic Acid (FDCA) biopolymer production. Assessed the feasibility of scaling up lab-scale production to an industrial level, conducting comprehensive heat and material balances, providing cost estimates, and performing high-level equipment sizing.