Kush Kotecha

Teesside | kush-kotecha.github.io | kush.kotecha38@gmail.com

Profile

I am a Chemical Engineering graduate who is seeking a role where I am able to develop my skills, with the aim of producing high quality, valuable work - something that I can take pride in and contribute to the success of my team. I have a particular interest in sustainable utility systems and process safety, but I believe I have proven to be an enthusiastic, effective, and committed individual through a variety of disciplines so I am open to all opportunities.

Education

Masters in Chemical Engineering | 2020- 2024 | University of Manchester

- Modules studied in 4th year: Nuclear Fuel Cycle, Numerical Methods & Simulation, Sustainable Energy Systems, Utility System Design
- Modules studied in 3rd year: Batch Processing, Catalytic Reaction Engineering, Multi-component Engineering Separation, Process Control, Process Design, Process Synthesis, Sustainability
- Modules studied in 2nd year: Chemical Reactor Design, Distillation and Absorption, Engineering Maths 2 and 3, Materials Science and Mechanical Design, Momentum Heat and Mass Transfer, Process Integration, Process Optimisation, Process Safety, Solids Processing
- Modules studied in 1st year: Chemical Thermodynamics, Computational Methods, Engineering Biotechnology, Engineering Chemistry, Engineering Maths, Fluid Flow, Fundamentals of Thermodynamics, Process Engineering Fundamentals, Process Heat Transfer

A levels | 2018-2020 | Queen Elizabeth Sixth Form College, Darlington

- Maths, Physics, Chemistry, Computing - A*, A, A, A

GCSEs | 2018 | Egglescliffe School, Stockton-On-Tees

- 11 GCSEs including Maths and English, 3 9's, 5 8's, 3 7's

Skills & Abilities

- An analytical thinker with proven problem-solving skills
- I am a quick learner and can implement new techniques into my work confidently
- Able to think on my feet and devise a range of possible solutions
- A strong team player that is willing to take on different duties/roles in order for the team to be successful
- A confident communicator with solid presentation skills
- Fluent in English and Gujarati, and I have a basic level of conversational French
- Competent computer user, accomplished in Microsoft and several technical software packages, including HTML and SQL experience
- Completed many projects in Python, C#, SQL, HTML, and competed in HP Codewars 2017, 2018.
- Experienced with laboratory environments and equipment e.g. small scale distillation columns, cooling towers and heat exchangers, and emulsification sonolators
- Familiar with software such as Matlab and Simulink, Aspen Plus, Sprint and CcalC 2 (University of Manchester)

Work Experiences and Responsibilities

- Dissertation - Wetting of an electrolyte droplet on graphite using Molecular Dynamics (MD) - The primary objective of my initial report was to perform a broad range of research about the topic. With a solid understanding of each component within the system, I was able to offer my own suggestions on what to investigate. Once this was decided, I was then taught how to create the input files for simulation. Here, I conducted research which focused on how the system was simulated in Molecular Dynamics including implementation of thermostats and barostats, and use of finite difference and PME methods. While the simulations were running, I delegated some time to creating python codes which optimised the time taken for analysis procedures for both myself and colleagues. I then spent some time applying the results to reality, discussing product feasibility and the future of this technology's development.

- The goal of my 3rd year project was to design a p-Xylene manufacturing plant that was economically favourable, sustainable and safe. The first part involved deciding the best synthesis route, so there was a large focus on literature research, data analysis, and collective decision making. The second part was independent and more technical in nature; I developed the optimised process design for the Reactor unit operation. The third part involved bringing our designs together to analyse the economics, safety aspects, and environmental impacts of the overall facility design and agree on an optimal design arrangement. My responsibilities included ensuring that tasks were distributed fairly and played to each individual's strengths, and organising regular face to face meetings to drive progress and support clear communication.

- Working with children - providing meals and a safe place for children at the local primary school during holidays. I was responsible for cooking the vegetarian option and cleaning up in the kitchen. I have also worked as a tutor for GCSE maths and science where I prepared lessons based on topics chosen by the student.

- As a college student, I created a personal webpage for a doctor to promote himself in regards to his medical law practice. I actively sought feedback in order to deliver a product that suited his needs. Recently, I built kush-kotecha.github.io which required relearning syntax for HTML, CSS and JS. Combined with other, developed skills such as computational thinking, I created a webpage with better functionality and visual appeal.

Achievements and Hobbies

- I am a keen musician and was part of Tees Valley Youth Orchestra (TVYO) for 5 years, where I led the percussion section. I helped raise money for local charities and fund our international performances by busking. I was also part of a Chinese music group called Yangchin which involved playing different types of instruments, and we would regularly perform for residents at care homes.

- I played the alto saxophone for 3 years where I achieved RCM grade 5. I joined my school's woodwind orchestra and would join the woodwind section of TVYO during Christmas concerts and open days.

- I trained for 11 years in karate and gained my 2nd Dan (black belt) by the age of 16. This involved sparring and training with members, and teaching younger students.

- I am an animal lover and have two guinea pigs named Gin & Bean.

- I enjoy staying fit; I go to the gym consistently and enjoy activities such as badminton, bouldering, and hiking.

References

- Available on request.