Kesler Isoko

MEng – Chemical Engineering

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About Me

Technical Skills C/C++, Python, JavaScript, Solidity, Matlab, Aspen Plus
Markup XML, HTML, JSON, Markdown
Styling CSS, SCSS, LaTeX
CAD AutoCad, Fusion 360, diagrams.net, 3D Paint, Lucidchart
Interests Debating, Philosophy, Politics, Gym, Futsal

Engineering Experience

Expert System

SURE, 2021 Sheffield, Uk (Summer 2011)

- The Sheffield Undergraduate Research Experience (SURE) is a program that allows students to do research with a supervisor on real problems whilst receiving various workshops to improve research and presentation skills.
- Researched powder explosions and programmed an Hazop automation application to extend the functionality of an existing Expert System.
- developed an API and an Object Relational Model (ORM) database using python.
- implemented threading and multiprocessing with rigorous resource management to avoid dead lock
- implemented various data structures to optimise scalability and space complexity
- used different design patterns to organise system functionality

Cybathlon, Bionic Arm

UoS Bionic Society Sheffield (November 2020 - current)

- As part of the cybathlon competition in 2024 I am collaborating with a multidisciplinary team of engineering students to develop a robotic prosthetic arm and leg for amputees.
- Specifically, with a partner, I contributed to the development of EMG Sensors from scratch, I also helped in designing a sensor that outputs stable signals that can be passed to a machine learning algorithm (using DNN).
- More recently I started to develop a Reinforcement Learning Algorithm (Deep Utility Network) from scratch.
- The project will directly impact the life of an amputee (Mark) who collaborates with the society.

Discovery Days

British Petroleum Plc

Online (August 2021)

- Invited to one of BP's early career (discovery day) events
- Learned about how BP manages its assets and the various projects involving CCUS, Offsetting and how they are transitioning to net zero company by 2050
- I was also introduced to the work that Challengers do, from their typical rota to more technical information such as the modelling and optimisation done by process engineers

Jane Street, Uk

Online (March 2021)

- Took part to Jane Streets discovery day
- During this occasion I was introduced to various market making strategies that allow the firm to make a profit almost risk free
- I was introduced to the technology that they use such as OCaml and the different advantages of using a functional programming language.
- Learned the importance of sound judgement and the danger of cognitive biases.

Education

University of Sheffield Sheffield, Uk (2019–Present)

- MEng Chemical Engineering
- 1st year average: 71 (excluding two modules as no mark was awarded)
- 2nd year average: 67

Wyke Sixth Form College Kingston upon Hull, (September 2016 – July 2019)

- GCE Advanced Level, Mathematics: B
- BTEC Level 3 Subsidiary Diploma: Business, Dist*
- BTEC Level 3 Diploma (QCF), Applied science: Dist Dist*
- My drive and commitment to succeed allowed me to complete my AS and A2 Maths in one year and complete over 10 subjects during the 3 years in college

Work Experience

Safety Steward, Showsec Sheffield, UK (November 2019 – August 2021)

- Had to be a versatile worker in order to cooperate effectively within small teams and complete various tasks such as to check tickets, monitoring the traffic of spectators.
- Ensure the facility was viable and equipment was working.
- Responsible for ensuring the safety of the spectators.
- Worked in order to achieve a major, pre-assigned goal interdependently.

Personal Projects

IsoKoin Cryptocurrency (August 2021)

- Developed my own cryptocurrency from scratch that runs on the ISK platform (small blockchain that I also developed) in order to power a decentralised application.
- The use case of the cryptocurrency has yet to be decided, nevertheless, the major candidates can be voted within on the IsoKoin website.

Algorithmic Trading Bot (August 2020)

- Developed a Pairs Trading strategy using statistical arbitrage by looking for cointegrated pairs and modelling the spread using Ornstein-Uhlenbeck and testing for stationarity using ADF and Hurst exponent hypothesis tests.
- Constructed a Fama French factors model by estimating factors using Monte Carlo simulation
- Built a mean reversion strategy using hidden markov models where each state represents whether a pair of securities is synchronized or not.
- Modeling volatility using Dr. Jim Gatheral's approach, using sigma in the Black-Scholes to price derivatives differently
- Currently migrating some of the code to C++ to optimise performance
- analysed time and space complexity of different algorithms to improve code

Chemical Engineering Packages (September 2021)

- Modelled reaction kitenics of ideal reactors using python and Matlab
- Developed an automated Risk Assesment application that takes in information from the user and produces a Risk Assesment document as an HTML file.
- Programmed various process safety frameworks such as Event and Fault trees

Personal Portfolio (August 2020)

- Developed a personal portfolio where visitors can learn more about other projects that I worked on.