

Faisal Irzal

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Profile

Analytical thinker with a combination of Data Science & Mechanical Engineering skills, and expertise in mathematical modelling, analysis and simulation. Experienced in software development in an academic environment. Have a growth mindset, leadership skills and high interest for data analysis and visualization to provide value for business and society as a whole. Possess can-do mentality and enjoy working closely in a team to achieve success.

Data Science & Mechanical Engineering Experience

2019 – 2020

Proposals Data Specialist | McDermott | The Hague

I led proposal development team through

- overall engineering management of tenders, including winning strategy formulation, budget estimate, schedule and scope.
- reviewing tender documents and translating the requirements into clear and concise execution plan to be included in the proposal
- providing advice to sales manager during preparation of budget estimate for a proposal through benchmark data analysis and visualization using Python and Tableau
- supporting company to win a Carbon Capture & Utilization (FEED) project with contract estimate of 2.5M EUR to deliver sustainable solution to a well-known steelmaking company in the Netherlands.

2013 – 2019

Mechanical Package Engineer | McDermott | The Hague

Engineered, developed and managed mechanical package equipment to be delivered for our client on an engineering project. Strong collaboration with other engineering and commercial disciplines located in several places worldwide.

- Helped client secure a purchase order of several machinery equipment with average of 10% below market price by evaluating vendor quote item package completeness and prices
- Performed **Principal Component Analysis** to reduce the variable dimensionality of available equipment vendor data to optimize the vendor approval process

2009 – 2013

PhD Researcher | TU Eindhoven | Eindhoven

Successfully developed simulation in C++ object-oriented programming language to analyze crack behavior in fluid-saturated porous media. Model was further developed for fracking process in oil & gas industry and for studying degenerative lumbar disc disease that cause low back pain.

2007 – 2009

Data Modelling Consultant | TU Eindhoven | Eindhoven

Provided solutions to clients' industrial problems through model development, data & statistical analysis and simulation.

- Developed MATLAB based calculation tools to provide qualitative analysis of a large printing system for Océ, The Netherlands
- Developed statistical model and calculation based on MATLAB to improve efficiency calculation of a ship propeller utilizing several sensor data for Wärtsilä

Machine Learning Projects

- Provided analysis of Rotterdam's best neighborhoods to live with respect to house price and demographic data. Tableau dashboard was made to provide insights of the data. Results of the analysis could be use as guidelines to those who are interested to buy properties in Rotterdam
- Tested and applied several ML techniques (**Logistic Regression**, **Random Forest** and **XGBoost**) to detect frauds in credit card transactions. From the analysis, **XGBoost** turned to provide the best prediction with the accuracy of 97.12%. The analysis could be used to enhance transaction security for customers
- Designed interactive web-application to assist insurance company to predict final claim costs by analyzing available customers data including claim descriptions using **Random Forest Regressor** and **Natural Language Processing**

Education

- PhD | Mechanical Engineering | TU Eindhoven – The Netherlands | 2009 - 2013
- MSc | Applied Mathematics | TU Kaiserslautern – Germany | 2004 - 2007
- BSc | Mathematics | Bandung Institute of Technology – Indonesia | 1999 – 2003

Certificates

- IBM Professional Certificate in Data Science. Key learning: DS methodology, relational databases using SQL & Python, constructing & evaluating ML models using python libraries
- Deep Learning AI. Key learning: Artificial Neural Network, TensorFlow, structure of ML projects, hyperparameter optimization
- Engineering Project Management. Key learning: project management, planning, scheduling, procurement, developing project execution plan
- Distinguished Toastmasters. Key learning: leadership, public speaking, storytelling

Skills

- **Professional**: Mathematical Modeling, Analysis & Simulation; Statistics & Probability; Neural Network; Engineering & Procurement; Project Management & Proposals Development
- **Programming**: Python (Scikit-learn, matplotlib, NLTK, Streamlit), SQL, Matlab and C++
- **Tools**: Jupyter Notebook, GitHub, Tableau, MS Excel, Power-BI
- **Language**:

<u>English</u> : full professional proficiency	<u>German</u> : elementary proficiency
<u>Dutch</u> : conversational proficiency	<u>Indonesian</u> : native