EDWARD XU

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EDUCATION

Technical University of Denmark, Copenhagen, Denmark *Sept 2018 - Dec 2020*
MSc, Energy System Analysis ● energy economics, applied mathematics, software engineering

Chongqing University, Chongqing, China *Sept 2014 - June 2018*
BSc, Sustainable Energy Science and Engineering ● thermal physics, control, MILP

National Taiwan University of Science and Technology, Taiwan *Feb - June 2016*

TECHNICAL STRENGTH

Programming	Python, Julia, R, .NET, LaTeX, C ● relational database, unit test
Operations Research	discrete-event simulation, markov decision, supply chain management
Optimisation	MILP, stochastic, robust, dynamic, local search ● decomposition
Statistics	stochastic processes, regression analysis, time series analysis
Others	graph theory, system of equations, partial differential equation, micro-economics

WORK EXPERIENCE

encoord, Essen, Germany *Apr 2021 -*
Mathematical modeller ● Formulate system of equations for gas transportation and district heating ● Implement in .NET (NUnit and QuikGraph) ● Write 80+ pages of documentation with LaTeX and Graphviz

Department of Tech., Management, and Eco., Technical Uni. of Denmark *Feb - May 2021*
Teaching assistant for supply chain analytics ● Help students with MILP in JuMP, statistics and Julia code

Utiligize, Copenhagen, Denmark *Sept 2020 - Mar 2021*
Software engineer (part-time) ● Help build digital twin for power grids in western Denmark (6 voltage levels) ● Maintain Python queries for PostgreSQL in Google Cloud ● Implement optimal investment in CPLEX

Centrica Business Solutions, Antwerp, Belgium *July - Oct 2020*
Software engineer (internship), and industrial collaboration thesis: topology inference for radial distribution feeders based on power flow ● design, doc and maintain 5k+ lines of Python ● implement 2k+ lines for an algorithm to rank spanning arborescences in networkx ● rigorous unit testing with pytest

Department of Applied Math. and Computer Sci., Technical Uni. of Denmark *June 2020*
Teaching assistant for stochastic simulation ● Help students with statistics and algorithms ● Design and supervise 100% solar energy project ● Reproduce algorithms and exercises with MATLAB and Python

Shanghai Electric, Distributed Energy, Shanghai, China *July - Aug 2018*

Shanghai Aerospace Energy, Shanghai, China *May - June 2018*

OTHER PROJECTS

cmdict a command line dictionary for English and German

MatrixOptim.jl MILP, robust optim., stochastic optim., decomposition in matrix
All the optimisation algorithms I have learnt with a coherent syntax

mgrid power grid as multilayer network
A Python package to model power grids as multilayer networks ● All the electric devices at one voltage level compose one layer ● An interface for power system analysis, sensitivity analysis, etc ● Bus impedance matrix for unbalanced distribution networks

elec-consumption a linear regression analysis report on electricity consumption

StaticDESim mathematical models in rated condition for optimisation
For thermal engines, heat transfers and pipes ● Genetic algorithm to optimise design parameters ● Award: excellent bachelor graduation project, Chongqing University