

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 - Jun 2018
BSc, Sustainable Energy Science and Engineering • thermal physics, control, MILP

National Taiwan University of Science and Technology, Taipei, Taiwan Feb - Jun 2016

TECHNICAL STRENGTH

Programming Python, Julia, R, VB, C#, LaTeX, MATLAB, C • relational database, unit test
OR 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, partial differential equation, system of equations, micro-economics

WORK EXPERIENCE

encoord, Essen, Germany Apr 2021 -
Mathematical modeller • Linearise system of equations for gas transportation • Equivalent circuit for AC power flow • Model district heating and couple with power grid • VB, C#

Department of Tech., Management, and Eco., Technical Uni. of Denmark Feb - May 2021
Teaching assistant for [supply chain analytics](#) • Help students with MILP models, statistics and Julia code

Utiligize, Copenhagen, Denmark Sept 2020 - Mar 2021
Software engineer (student assistant) • Build digital twin for power grids in western Denmark with Python, PostgreSQL, and Google Cloud (client: Danish Energy Agency) • Power flow calculation, optimal investment

Centrica Business Solutions, Antwerp, Belgium Jul - Oct 2020
Software engineer (internship), and industrial collaboration thesis: topology inference for radial distribution feeders based on power flow results • Python and unit tests pytest

Department of Applied Math and Computer Sci., Technical Uni. of Denmark Jun 2020
Teaching assistant for [stochastic simulation](#) • Help students with statistics and algorithms • Design and supervise a project, [100% solar energy](#) • Reproduced all algorithms and exercises with MATLAB and Python

Shanghai Electric, Distributed Energy, Shanghai, China Jul - Aug 2018

Shanghai Aerospace Energy, Shanghai, China May - Jun 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