Sara Kamali

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Education

2020–Present **University of Waterloo**
Process Systems Engineering MASc
GPA – 93/100

2015–2019 **Sharif University of Technology**
Chemical Engineering B.Sc
GPA – 95/100

Experience

Sep 2021 – Present **Teaching assistant,** University of Waterloo
- Serve as a teaching assistant for Aspen Plus lab to a group of 75 undergraduate students
- Preparation of course tutorials and assistance of students for troubleshooting their Aspen files

Sep 2019 – Dec 2019 **Teaching assistant,** Sharif University of Technology
- Served as a laboratory assistant for process control lab to undergraduate students
- Planned and prepared tutorials and experiments

Jun 2019 – Aug 2019 **Research intern,** The Research Center of New Technologies in Life Science Engineering
- Cell culture and working with nanoliposome producer, millibioreactor and electrospinning machine

Jan 2019 – April 2019 **Teaching assistant,** Sharif University of Technology
- Served as a teaching assistant for the final project of applied mathematics in chemical engineering course
- Evaluation of the students' performance on their project presentation and understanding the concepts

Jun 2018 – Sep 2018 **Engineer intern,** Sinadarou Labs Company
- Different production lines, such as lines of drops and monodose drugs
- Wastewater treatment section especially nitrate removal from the wastewater

Projects

Sep 2020 – Ongoing **Dynamic modeling of recirculating aquaculture systems,** *Prof. Sandoval, Prof. Ward, University of Waterloo, Canada*
- Dynamic modeling of intensive fish farming integrated with wastewater treatment
- Sensitivity analysis and model validation
- Implementation of model predictive controllers

Winter 2021 **Process optimization,** *Prof. Sandoval, University of Waterloo, Canada*
- Optimal sizing of a solar water heating system for aquaculture application (Using Pyomo)

Fall 2018 **Applications of computer in chemical engineering,** *Prof. Hamzehlouyan, Sharif University of Technology, Iran*
- Simulation of an integrated plant layout for heat and power cogeneration from diluted bioethanol using Aspen HYSYS

Fall 2018 **Prefeasibility study of chemical processes,** *Prof. Vafa, Sharif University of Technology, Iran*
- Simulation and feasibility study of producing vinyl Chloride using OXYVINYLS license (Aspen HYSYS)
- Market research, cost estimation,and profitability analysis by considering interest and time value of money

Achievements

Dec 2020 **Teaching Assistant Certificate,** *University of Waterloo*

Publication

Spring 2020 **Simulation of Momentum and Mass Transport in a 3D Porous Scaffold,** *Iranian Journal of Biomedical Engineering*

- The aim of this study was investigation of the effective geometrical parameters on the porous 3D scaffolds from the transport phenomena (mass and momentum) point of view. For this purpose, the mass and momentum transfer equations were solved using COMSOL Multiphysics.

Skills

- Python
- Pyomo
- Aspen Plus
- Aspen HYSYS
- COMSOL Multiphysics
- AutoCAD
- MATLAB
- Modelica
- Microsoft office

Courses

Applied engineering mathematics, Advanced process dynamics and control, Process optimization, Fluid mechanics, Heat transfer, Kinetics and reactor design, Thermodynamics, Differential equations, Industrial unit operations

Communication

English, Persian

References

L.Ricardez Sandoval
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V. Ward
Assistant Professor
Biochemical and Biomedical Engineering, University of Waterloo
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