KUTAY BERK SEZGINEL

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https://kut.ai | Online version of this resume is available here: https://kut.ai/cv/

PROFESSIONAL EXPERIENCE

Senior Data Scientist Jan 2020 - present
Liaison International Remote (US)

- Build, validate, and troubleshoot machine learning models using internal tools and metrics and perform individual research on various modeling problems.
- Create product roadmaps to determine and implement specific release features for the data science engine (including unit and integration tests for validation) on a quarterly basis while ensuring compliance with SOC 2 Type 2 certification and integration with CI/CD tools to improve process efficiency and code quality.
- Create and maintain an internal website to document library usage, modeling approaches, research experiments and communicate data science results and insights to team members and customers.
- Periodically review customer data and models to identify significant changes and/or issues in the data or predictions, develop software to automate stringent data checks to identify and address inconsistent data issues and leak variables.

Computational Engineering Fellow Jan 2019 – May 2019
NuMat Technologies, Inc. Skokie, IL

- Developed of a proprietary Python library for computational materials design that integrates various molecular simulations tools with high-performance cloud computing (AWS). Created a workflow to perform reproducible and trackable experiments. Ran a high-throughput screening study and built machine learnings to discover next generation candidate materials.
- Designed and 3D printed custom parts to improve speed and decrease material loss during production. Developed process controllers (hardware and software) with a web interface.

EDUCATION

Doctor of Philosophy in Chemical & Petroleum Engineering Sep 2015 – Jan 2020
University of Pittsburgh, Swanson School of Engineering Pittsburgh, PA

- Dissertation Title: "*Computational materials design for molecular machinery: From nanoporous crystals to nanoscale racecars*"
- Adviser: Dr. Christopher E. Wilmer

Master of Science in Chemical & Biological Engineering Sep 2013 – June 2015
Koc University, Graduate School of Science and Engineering Istanbul, Turkey

- Dissertation Title: *"Computational and Experimental Investigation of Methane Adsorption in Pure and Ionic Liquid Modified Metal-Organic Frameworks"*

Bachelor of Science in Chemical & Biological Engineering Sep 2008 – June 2013
Koc University, School of Engineering Istanbul, Turkey
Energy and Environmental Engineering Track

RESEARCH AND TEACHING EXPERIENCE

Graduate Research Assistant Sep 2015 – Jan 2020
Hypothetical Materials Lab, University of Pittsburgh Pittsburgh, PA

- Developed computational methods for functional materials design including materials such as metal-organic frameworks, supramolecular cages, and artificial molecular machines. Ran high-throughput screening studies with molecular simulations. Performed data analysis and built ML models using open-source and self-developed Python libraries.
- Organization of world's first computational nanocar race: Formula Nano.
- Recreation of the lab website (wilmerlab.com) on GitHub and maintenance as web administrator.

Teaching Assistant and Graduate Mentor Spring 2016 – 2020
Hypothetical Materials Lab, University of Pittsburgh Pittsburgh, PA

- Mentored three undergraduate and two master students in data collection and analysis for various projects.
- Guided the students in preparation and presentation of research findings.
- Helped prepare teaching material, graded exams and Teaching assistant for 6 classes
- Instructed weekly lab sessions for teaching Aspen HYSYS software. Prepared and graded quizzes for lab sessions, assigned four design projects and evaluated them, proctored the midterms and finals.

Graduate Research Assistant Sep 2013 – June 2015
Nanomaterials, Energy and Molecular Modelling Research Group & Istanbul, Turkey
Koc University University Tupras Energy Center (KUTEM)

- High-throughput screening of porous materials (MOFs) for gas storage and separation applications using molecular simulations. First lab member to automate many in-house computational procedures.
- Investigated the structural and thermodynamic properties of MOFs to understand methane adsorption mechanism and constructed models to predict natural gas storage of MOFs at various conditions.
- Post-synthetic modifications of porous materials using ionic liquids to improve gas storage/selectivity performances. Characterization by TGA, XRD, FT-IR, surface area and gas adsorption measurements.

PUBLICATIONS & CONFERENCE PRESENTATIONS

- 11 peer reviewed publications (6 first author and 5 second author)
- 280+ citations
- 12 international conference presentations (in-person, oral)

HONORS & AWARDS (selected)

- Braskem America Inc. Award (outstanding PhD student in Chemical Eng., University of Pittsburgh)
- IBM BlueHack Competition, Second Place (2019)
- Innocentive challenge winner *Chemical Sorbents for Fixed Bed Mercury (Hg^0) Control* ($5000 prize)
- Full Merit Scholarship – University of Pittsburgh PhD & Koc University, BS and MS

INTERESTS

- Music production, teach a live music + yoga class biweekly, develop software tools for Turkish makam music, 3D printing, robotics, DIY, scientific visualization, generative art, rock climbing

References will be provided upon request.