# Kamiar Asgari

Los Angeles, CA | kamiaras@usc.edu | (213) 220-7360 | linkedin.com/in/kamiaras | kamiaras.github.io

**Summary:** Optimization Ph.D. (USC, May 2026). First-order & interior-point; population-based (DE/QPSO /GA); OCO/bandits; ML/NN with PyTorch & CUDA.

## TECHNICAL SKILLS

**Python/ML:** PyTorch, scikit-learn, NumPy, pandas, matplotlib, Plotly, Keras; SciPy; CUDA
**Optimization & Theory:** First-order and interior-point methods; Online Convex Optimization (FTRL, OMD); bandits; population-based global optimization (Differential Evolution, QPSO , Genetic Algorithms)
**Systems/Tools:** Linux, Git/GitHub; Shapely *(computational geometry)*

## WORK EXPERIENCE

**Chevron CiSoft (USC)**, Los Angeles, CA — Summer 2025
*Research Intern — Optimization & ML (Supervisor: Dr. Andrei Sergiu Popa)*

- Designed a Voronoi/computational-geometry optimizer to maximize new-well count subject to spacing/boundary constraints and a minimum coverage requirement (DE/PSO/GA); cut manual design time by $\sim 70\%$.
- Trained two neural-network surrogates ($R^2_{\text{test}} = 0.865, 0.873$) to predict production from design parameters; built an inverse-design pipeline (discretized inverse mapping + quasi-Newton) that improved design diversity vs. DE/PSO/GA and reduced manual design time by $\sim 60\%$.
- Built a neural-network model ($R^2_{\text{test}} = 0.782$) to predict two-year cumulative production and an interactive 3D response-surface explorer to visualize trade-offs and search the design space.

## ACADEMIC PROJECTS

**Image Classification of American Sign Language (ASL):** Designed and trained a PyTorch CNN on 87k images (29 classes), 97.6% test accuracy; reproducible pipeline (SGD+momentum, StepLR) with CUDA on RTX 5000 ($\sim 5\times$ faster vs. CPU).
**Bird Species Classification:** Keras transfer learning (EfficientNetB0/VGG16) on small data; trained head with augmentation + BatchNorm/Dropout, Adam, early stopping; reported precision/recall/F1.

## EDUCATION

**University of Southern California (USC)**, Los Angeles, CA — Expected May 2026
Ph.D., Electrical & Computer Engineering — GPA: 3.89/4
Advisor: Prof. Michael J. Neely

**Sharif University of Technology**, Tehran, Iran — Aug 2014 – Aug 2018
B.S., Electrical Engineering — GPA: 17.9/20

## AWARDS & SERVICE

**Awards:** Best Poster — USC–Amazon Center (2023); Iran Physics Olympiad — Bronze (2013)
**Service:** Reviewer — SIOPT; L4DC '25; Teaching Assistant — Optimization, Algorithm Design, Probability, Data Networks; Mentor — 2 M.S. students

## SELECTED PUBLICATIONS

- **Asgari, K.**; Neely, M. J. *Nonsmooth Projection-Free Optimization with Functional Constraints.* **Computational Optimization and Applications (COAP)**, 2024. Extended Frank–Wolfe to nonsmooth, functionally constrained problems with stochastic gradients; projection-free (LMO) approach suitable for large-scale constrained ML and resource allocation.
- **Asgari, K.**; Neely, M. J. *Bregman-Style Online Convex Optimization with Energy Harvesting Constraints.* **POMACS**, 2020. Multiplicative updates for OCO with battery (energy-harvesting) dynamics; yields feasible policies with sublinear regret in adversarial-with-memory settings (applications: wireless/IoT scheduling).