

GUNEYKAN OZGUL

State College, PA, USA
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RESEARCH INTERESTS

Probabilistic Algorithms, Theoretical Machine Learning/Optimization, Deep Learning, Quantum Information Processing, Quantum Computing.

TECHNICAL SKILLS

Programming	(Advanced) C/C++, Python, Java, Matlab, Mathematica.
Packages and Frameworks	Qt, Tensorflow, Pytorch, Clang, Boost, Git, L ^A T _E X.
Computer Science	Machine learning theory, optimization, deep learning, reinforcement learning, federated learning, bayesian methods, probabilistic algorithms, monte carlo algorithms, sampling theory, quantum computing, quantum machine learning, quantum neural networks.

PUBLICATIONS AND PREPRINTS

- **Guneykan Ozgul**, Xiantao Li, Mehrdad Mahdavi, Chunhao Wang. Stochastic quantum sampling for non-logconcave distributions and estimating partition functions, 2023. <https://arxiv.org/abs/2310.11445>. Preprint. Submitted to QIP 2024 for Revision.

WORK EXPERIENCE

Pennsylvania State University	2022-Present
<i>Graduate Research Assistant</i>	<i>PA</i>

Developing state-of-the-art algorithms for machine learning and quantum optimization.
Worked on model personalization and fairness in federated learning.

Pointr, The Deep Location Company	2019 - 2021
<i>Senior Research and Development Engineer</i>	<i>Istanbul, TR</i>

Developed state-of-the-art particle filter based indoor-outdoor positioning algorithms in C++.
Developed automated graph generation algorithms using Voronoi diagrams for way finding algorithms in C++.
Developed simulation tools to fast forward particle filter algorithms using C++, Qt, Python.
My work on "Faster Implementation of Particle Filter for Indoor Navigation" is at pre-patent stage.

Skylb	2017
<i>Software Engineering Intern, Android Developer</i>	<i>Istanbul, TR</i>

Huawei	2017
<i>Seeds for the Future Summer Training</i>	<i>Shenzen, China</i>

Free Software Company	2016
<i>Software Engineering Intern, Java Developer</i>	<i>Istanbul, TR</i>

EDUCATION

Pennsylvania State University
Ph.D. in Computer Science and Engineering
GPA: 3.9/4

2021-2025 (Expected)
State College, PA

Bogazici University
B.S in Computer Science, B.S in Physics (Double Major)
GPA: 3.79/4, ranked 2nd in graduating class.

2012-2018
Istanbul, TR

RESEARCH EXPERIENCE

Inzva
Team Lead

2019
Istanbul, TR

Lead a project on "Text Classification using Graph Neural Networks". The work was presented in a poster session of Inzva AI Program.

Bogazici University
Senior Project

2018
Istanbul, TR

A Hybrid Recommendation System with Application on Sparse Twitter Data
Under supervision of Ali Taylan Cemgil
The work was presented in departmental poster session.

Bogazici University
Undergraduate Researcher

2017
Istanbul, TR

Variance Reduction in Multidimensional Monte Carlo Integration
Under supervision of Taylan Akdogan