

# Radmir Sultamuratov

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## MACHINE LEARNING ENGINEER

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Extensive academic knowledge and 4+ years of practical experience in computational mathematics, machine learning, and programming. Specialized in computer vision, 3D/medical image processing and deep learning algorithms. Actively looking for opportunities in ML/AI and Data Science.

## EDUCATION

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<b>University of Houston</b> Ph.D. in Applied Mathematics	Houston, TX 2020 – 2024 (expected)
<b>Wayne State University</b> M.S. in Mathematics	Detroit, MI 2018 – 2020
<b>Kazakh National University</b> B.S. in Mathematics	Almaty, Kazakhstan 2005 – 2009

## RESEARCH EXPERIENCE

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<b>University of Houston</b> Graduate Research	Houston, TX Sep 2021 – present
<ul style="list-style-type: none"><li>• Trained an MRI autoencoder with Alzheimer classifier network yielding 86% prediction accuracy model</li><li>• Built a heart disease classification model with 97.5% OOB accuracy with Random Forest/K-means algorithms</li><li>• Fine-tuned parameters of ADMM algorithm application for diffeomorphic registration of deformable shapes</li><li>• Developed a resolution downsizing algorithm of 3D images based on metrics-induced graph connectivity using Matlab</li></ul>	
<b>Aikynetix LLC</b> Machine Learning Engineer - Internship	Houston, TX Summer 2022
<ul style="list-style-type: none"><li>• Built an api for face detection and face tracking application using MMpose and FaceNet toolboxes</li><li>• Tested and integrated pose and object detection models such as hrnet, resnet, yolov, tcformer into application</li><li>• Built and trained a custom pose classification ANN model with 98% held-out accuracy using PyTorch</li><li>• Developed video streaming algorithms for human physical parameters and pose phase estimation using OpenCV</li></ul>	
<b>University of Minnesota</b> Quantitative Research - Internship	Minneapolis, MN Summer 2020
<ul style="list-style-type: none"><li>• Implemented and fine-tuned quadratic interpolation for Delta/Rho variables producing 3-5% rel.error of approximation</li><li>• Worked on solutions of reducing the computational cost of the Greeks estimation for intra-day options trading</li></ul>	

## PUBLICATIONS

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1. *Automatic classification of deformable shapes*  
H. Dabirian, R. Sultamuratov, J. Herring, C. El-Tallawi, W. Zoghbi, A. Mang, R. Azencott  
doi:[10.48550/arXiv.2211.02530](https://doi.org/10.48550/arXiv.2211.02530)
2. *Maximum Matchings in Rectangle*  
A. Dzhumadil'dayev, R. Sultamuratov  
[gs-citation](#); [pdf](#)

## SKILLS

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**Programming:** Python, Matlab, C++, R, SQL

**Frameworks:** PyTorch, *TensorFlow/Keras*, OpenMM, OpenCV, pandas, sklearn, git, SLURM, ssh/remote, bash/zsh, GCP, Docker, VSCode, PAPI/TAU/OMP, multiprocessing

**Relevant coursework:** Optimization, Probability & Statistics, Numerical Methods, Deep Learning, Data-Driven Algorithms, Statistical Data Analysis, High-Performance Computing, Linux/Cluster Computing

## MACHINE LEARNING COURSE PROJECTS

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**Age Recognition** | Data-Driven Algorithms, University of Houston | [GitHub](#)

- Transformed 30k+ of face images from Kaggle into 128 measurements using OpenFace
- Implemented the PCA analysis and ML algorithms such as SVM, Random Forest to solve age recognition problem

**Match Prediction** | Statistical Data Analysis, Wayne State University | [GitHub](#)

- Collected 5k+ tennis match data from internet websites using parsing Python framework bs4
- Implemented ML algorithms such as KNN, QDA, LDA, Ridge&Lasso methods producing 89% prediction with KNN