

# Radmir Sultamuratov

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## EDUCATION

### University of Houston

Ph.D. in Applied Mathematics

Houston, TX

2020 – 2024 (expected)

### Wayne State University

M.S. in Mathematics

Detroit, MI

2018 – 2020

### Kazakh National University

B.S. in Mathematics

Almaty, Kazakhstan

2005 – 2009

## WORK EXPERIENCE

### University of Houston

Graduate Research - Part time

Houston, TX

Sep 2021 – present

- Trained an MRI autoencoder with Alzheimer classifier network yielding 86% prediction accuracy model
- Built a heart disease classification model with 97.5% OOB accuracy with Random Forest/K-means algorithms
- Fine-tuned parameters of ADMM algorithm application for diffeomorphic registration of deformable shapes
- Developed a resolution downsizing algorithm of 3D images based on metrics-induced graph connectivity using Matlab

### Aikynetix LLC

Machine Learning Engineer - Internship

Houston, TX

Summer 2022

- Built an api for face detection and face tracking application using Mmpose and FaceNet toolboxes
- Tested and integrated pose and object detection models such as hrnet, resnet, yolov, tcformer into application
- Built and trained a custom pose classification ANN model with 98% held-out accuracy using PyTorch
- Developed human physics parameters and pose phase estimation for video streaming using OpenCV

### University of Minnesota

Quantitative Research - Internship

Minneapolis, MN

Summer 2020

- Implemented quadratic interpolation for Delta/Rho variables producing 3-5% rel.error of approximation
- Worked on solutions of reducing the computational cost of the Greeks estimation for intra-day options trading

### Innovation High School

Math Instructor, Competitive Coach - Full time

Almaty/Aqtau, Kazakhstan

2009 – 2018

- Taught competitive disciplines like Number Theory, Combinatorics, Projective Geometry and others
- Lead competitive study groups, aiding 100+ students in achieving accolades on national and international competitions
- Received an Honorable Mention from the Minister of Education

## PUBLICATIONS

### 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

**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