Farid Karimli

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EDUCATION

Boston University, Faculty of Computing and Data Sciences   Boston, MA
Data Science M.S. GPA 3.8   Sept 2023 - Dec 2024

Boston University, College of Arts and Sciences   Boston, MA
Computer Science B.A., Economics Minor. Cum Laude. GPA 3.7   May 2023
Relevant Coursework: Data Science, Statistics, Machine Learning, Databases, Cloud Dev

EXPERIENCE

Research Assistant, *Gardos Lab and IVR Group @ Boston U*   June 2023 – present
- Optimized image and text model (CLIP) inference by 200%, accelerating evaluation processes.
- Implementing advanced document retrieval and parsing techniques for academic AI assistants.
- Enhancing user interaction for people with disabilities through mouse-replacement and digital keyboard apps.
- Improved facial gesture recognition by 50% to facilitate clicking ability on AI-based mouse-replacement software.
- Conducted systematic analysis of pointer movement and selection out of 1,000,000+ mouse coordinates from 15+ users.
- Tech: Python, OpenCV, Chainlit, PyTorch, pandas.

Teaching Assistant, *BU Computer Science Department.*   Sept 2021 – Dec 2023
- Taught introductory CS material in a lab setting 3 times a week.
- Held 4 hours of office hours per week, developed grading rubrics and graded exams.
- Mentored students during problem sets and projects.

Engineering Intern, *Software Application and Innovation Lab,* Boston, MA   Summer 2022 & 2023
- Enhanced linguisting research by engineering a network graph visualization of the ASL lexicon.
- Resolved dependency issues in mobile applications and reduced codebases sizes by 20%.
- Accelerated company analysis by deploying a data pipeline and an internal data dashboard.

Data Engineer, *Smart Solutions*, Baku, Azerbaijan   June 2021 – August 2021
- Engineered Python scripts to automate the collection of e-tender data from Azerbaijani corporations.
- To support market analysis, collected and analyzed social media posts from banks for sentiment and keywords.
- Standardized SQL scripts to fetch data to detect and visualize of fraud in e-tender marketplace system.

PROJECTS

AirMouse | ElectronJS, React, Mediapipe, JavaScript
- Gives ability to control the mouse pointer via finger pointing and hand gestures using a webcam.
- Supports key points such as index fingertip for mouse movement and pinching for left clicks, and more.
- Created to investigate different interaction techniques and novel hand-to-coordinate mapping methods.

VideoASL | PyTorch, Python, pandas
- Fine-tuned multiple video classification models to recognize large-scale ASL vocabulary (>2000 signs).
- Achieved near 85% accuracy on a subset of signs with variational autoencoding (VideoMAE).
- Improved accuracy by 10% supplementing video features with hand landmark locations per frame.

Analysis of Police FIOs in Massachusetts - *Team Lead @ BU Spark!*
- Analyzed 1,000,000+ rows of worker health data and 10,000+ police FIO data to uncover patterns and biases.
- Coordinated with product manager and client to guarantee timely deliverable and project goals.
- Findings showed a 60% disparity in police field interrogation rates between minority and non-minority groups.

Work From Home Study – *BU Spark!*
- Performed multivariate regression analysis to assess and predict workers' mental health and productivity.
- Improved data presentation using heatmaps for joint pain and geographic maps for demographic bias.

Amazon Ratings Predictor / Python, sklearn, pandas, numpy
- Used boosted trees and forest regressors to classify movie review ratings, placing 12th in class at 65%+ accuracy.
- Improved prediction by 10% by engineering 10+ new features and sentiment analysis of review contents with VADER.

PUBLICATIONS & WORKING PAPERS

Demonstration of CameraMouseAI: A Head-Based Mouse-Control System for People with Severe Motor Disabilities,
Farid Karimli, Hao Yu, Emannuel Akosah, Srishti Jain, and Margrit Betke, and Wenxin Feng.
https://doi.org/10.1145/3663548.3688499.

AWARDS & HONORS
CAS Class of 2023 Cum Laude, Dean's List, BU CDS MSDS Scholarship.

SKILLS
Languages: Python, Java, Javascript, Typescript, C, C++, R, SQL MySQL,
Frameworks/Tools: PyTorch, Tensorflow, Google Cloud, , Electron, React, Docker, REST APIs.
Knowledge: Machine Learning, Data Science, Software Development, HCI, Databases, User Experience