Magzhan Gabidolla

SE2-213B, 5200 N. Lake Road, Merced, CA 95343, USA

✉ mgabidolla@ucmerced.edu

EDUCATION

University of California, Merced   **Jan 2020 – Dec 2024**
PhD, Machine Learning and Optimization   Merced, CA, USA

Nazarbayev University   **Aug 2015 – May 2019**
Bachelor of Science in Computer Science   Astana, Kazakhstan
- Summa Cum Laude, GPA 3.90/4.00

University College London   **Sep 2014 – June 2015**
University Preparatory Certificate   Astana, Kazakhstan

PUBLICATIONS

1. M. Á. Carreira-Perpiñán, and <u>M. Gabidolla</u>, A. Zharmagambetov: "Towards Better Decision Forests: Forest Alternating Optimization." *Conference on Computer Vision and Pattern Recognition (**CVPR 2023**)*

2. <u>M. Gabidolla</u>, and A. Zharmagambetov, and M. Á. Carreira-Perpiñán: "Cost-sensitive learning of classification trees, with application to imbalanced datasets." *Bay Area Machine Learning Symposium (**BayLearn 2023**)*

3. R. Kairgeldin, <u>M. Gabidolla</u> and M. Á. Carreira-Perpiñán: "Adaptive Softmax Trees for Large Multiclass Tasks." *in submission (2023)*

4. <u>M. Gabidolla</u>, and M. Á. Carreira-Perpiñán: "Optimal Interpretable Clustering Using Oblique Decision Trees." *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2022**)*

5. <u>M. Gabidolla</u>, and M. Á. Carreira-Perpiñán: "Pushing the Envelope of Gradient Boosting Forests via Globally-Optimized Oblique Trees." *Conference on Computer Vision and Pattern Recognition (**CVPR 2022**)*

6. A. Zharmagambetov, <u>M. Gabidolla</u> and M. Á. Carreira-Perpiñán: "Softmax Tree: An Accurate, Fast Classifier When the Number of Classes Is Large." *Conference on Empirical Methods in Natural Language Processing (**EMNLP 2021**)*

7. <u>M. Gabidolla</u>, A. Zharmagambetov and M. Á. Carreira-Perpiñán: "Improved Multiclass AdaBoost Using Sparse Oblique Decision Trees." *International Joint Conference on Neural Networks (**IJCNN 2022**)*

8. <u>M. Gabidolla</u>, A. Zharmagambetov and M. Á. Carreira-Perpiñán: "Boosted Sparse Oblique Decision Trees." *Bay Area Machine Learning Symposium (**BayLearn 2020**)*

9. Y. Idelbayev, A. Zharmagambetov, <u>M. Gabidolla</u> and M. Á. Carreira-Perpiñán: "Faster Neural Net Inference via Forests of Sparse Oblique Decision Trees." *in submission (2021)*

10. A. Zharmagambetov, <u>M. Gabidolla</u> and M. Á. Carreira-Perpiñán: "Improved Multiclass AdaBoost for Image Classification: the Role of Tree Optimization." *IEEE International Conference on Image Processing (**ICIP 2021**)*

11. A. Zharmagambetov, <u>M. Gabidolla</u> and M. Á. Carreira-Perpiñán: "Improved Boosted Regression Forests Through Non-Greedy Tree Optimization." *International Joint Conference on Neural Networks (**IJCNN 2021**)*

12. A. Zharmagambetov, S. S. Hada, <u>M. Gabidolla</u> and M. Á. Carreira-Perpiñán: "Non-Greedy Algorithms for Decision Tree Optimization: An Experimental Comparison." *International Joint Conference on Neural Networks (**IJCNN 2021**)*

RESEARCH/PROJECT EXPERIENCE

Dept. of Computer Science and Engineering, UC Merced   **Jan 2020 – Present**
Research/Teaching Assistant   Merced, CA, USA

- Research area: machine learning and optimization, specifically, learning decision trees and tree-based methods, and their application in various domains: supervised learning, clustering, neural network compression, and model interpretability. Advisor: Miguel Á. Carreira-Perpiñán

- Teaching Assistant for the following courses: Intro to Machine Learning (Spring 2023, Fall 2023), Algorithm Design and Analysis (Fall 2023), Computer Organization (Fall 2022), Intro to Object Oriented Programming (Spring 2021), Discrete Math (Spring 2020)

NSF I-CORPS^{TM}   **Summer 2022**
Co-Entrepreneurial Lead   Bay Area, CA, USA

Translational Neuroimaging Group, Charité – Universitätsmedizin Berlin   **Jul 2019 – Aug 2019**
Research Intern   Berlin, Germany

- Developed deep learning models for automatic segmentation of optical coherence tomography (OCT) images of retina. Hosts: Seyedamirhosein Motamedi and Alexander Brandt

Institute of Smart Systems and Artificial Intelligence, Nazarbayev University   **Jun 2019 – Dec 2019**
Research Assistant   Astana, Kazakhstan

- Successfully trained deep neural networks for brain tumor segmentation of MRI scans obtained from local clinics. Advisors: M. Fatih Demirci and H. Atakan Varol

SKILLS

Programming languages: C, C++, Python, Java
Frameworks: PyTorch, TensorFlow, scikit-learn, LIBLINEAR/LIBSVM, XGBoost