

Mikhail M. Meskhi

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EDUCATION

University of Houston Ph.D. in Computer Science, Advisor: Ricardo Vilalta	Houston, TX 2019–Current
North American University B.S. in Computer Science, GPA: 3.80/4.00	Houston, TX 2015–2019

RESEARCH

My research interests lie within the realm of metalearning. I work on topics such as data characterization, performance estimation, and model selection within the *learning to learn* framework. My goal is to build self-adaptive learning systems that are capable of identifying key task characteristics and adjusting their internal mechanisms accordingly.

PUBLICATIONS

- [1] **M. Meskhi, Mikhail**, A. Rivolli, Rafael G. Mantovani, and R. Vilalta, “Learning Abstract Task Representations”, *AAAI Conference on Artificial Intelligence, Meta-Learning & Co-Hosted Challenge Workshop*, Jan. 2021.
- [2] R. Vilalta and **M. M. Meskhi**, “Transfer of knowledge across tasks”, in *Metalearning: Applications To Data Mining, second edition*, Springer, 2021.
- [3] R. Vilalta, K. D. Gupta, D. Boumber, and **M. M. Meskhi**, “A general approach to domain adaptation with applications in astronomy”, *Publications of the Astronomical Society of the Pacific*, vol. 131, no. 1004, p. 108 008, Sep. 2019.

EXPERIENCE

University of Houston Research Assistant, Advisor: Ricardo Vilalta	Houston, TX 2019 –Current
<ul style="list-style-type: none">– Pattern Analysis Lab– Current work in progress. Inducing abstract meta-features from deep neural networks as learned latent variables for task characterization in the metalearning problem. Understanding the behavior and expressiveness of traditional meta-features and induced meta-models for generalization performance estimation.	
PDR Corp Lead Data Scientist Intern	Houston, TX February 2019 –August 2019
<ul style="list-style-type: none">– Architecture Data Intelligence– Built automated data extracting and processing pipelines using Apache tools to ETL extracted data from architecture programs into a data lake. Wrote data transformation scripts in Python for Spark. Scripts were automated using Airflow. Also worked on setting up and defining the data lake structure on Azure Data Store.	
University of Houston Research Assistant, Advisor: Francisco Cantu	Houston, TX Summer 2019

- Electoral Ballot Computer Vision
- Developed and deployed a convolutional neural model capable of detecting handwritten digits in electoral ballots during elections in Mexico. Built a pipeline on AWS EC2 where a PyTorch model was deployed via Torchserve. Raw image data was pre-processed using cv2 library to identify and extract regions of interest.

SKILLS

- **Languages:** Python, C, R, MySQL, MATLAB
- **ML:** PyTorch, Scikit-Learn, SciPy, OpenML, Skorch
- **Dev Ops:** S3, Aurora, Airflow, NiFi, Spark
- **HPC:** Slurm, Docker, Bash

PROJECTS

See full list of projects on github.com/michaelmmeskhi

- TEX (Computer Vision, 2019)
Using Taylor expansions to understand CNNs.
- MI Non-Linear Programming (Gekko, 2020)
Non-linear optimization for failure estimation.

TEACHING & REVIEWER POSITIONS

- **Junior Reviewer** at the Metalearning workshop at NeurIPS
AutoML and Metalearning Track October 2020
- **Teaching Assistant** at the University of Houston
Fundamentals of Operating Systems (COSC 3360/6310) Fall 2020
- **Teaching Assistant** at the University of Houston
Fundamentals of Operating Systems (COSC 3360/6310) Spring 2019
- **Teaching Assistant** at the University of Houston
Computer Science and Programming (COSC 1306-02) Fall 2019

SCHOLARSHIPS AND AWARDS

- Graduate Tuition Fellowship at the University of Houston 2019–2024
- MLH hackHouston Gold Medal at the Texas Southern University 2015
- Presidential Scholarship at the North American University 2015–2019