Muhammad "Osama" Sakhi

U.S. Citizen ♦ msakhi3@gatech.edu ♦ http://sakhi.es ♦ https://github.com/mosdragon

EDUCATION

Georgia Institute of Technology *Atlanta, GA*

- **Expected Graduation:** December 2019
- **Degree:** Master of Science in Computational Science & Engineering
- **GPA:** 3.85
- **Coursework:** Computer Vision, Learning with Limited Supervision, Computational Data Analysis, Numerical Linear Algebra, Machine Learning for Trading, Computational Chemistry, Quantum Mechanics

Georgia Institute of Technology *Atlanta, GA*

- **Degree:** Bachelor of Science in Computer Science
- **Concentrations:** Intelligence & Devices
- **GPA:** 3.86
- **Coursework:** Machine Learning, Natural Language Processing, Robotics and Perception, Artificial Intelligence

RESEARCH

***The REDUCE Project,* Social Dynamics and Wellbeing Lab, Dr. Munmun De Choudhury** *July. 2019 – Present*

- Creating embeddings for social media data to feed into time-series model to forecast weekly suicide attempts

***Facebook SUMO Challenge,* Dr. Zhile Ren & Dr. Frank Dellaert** [*http://sakhi.es/project/sumo]* *Sep. 2018 – Mar. 2019*

- Trained a Faster-R-CNN network on 360 Degree RGB-D images to localize bounding boxes in 2D
- Recovered 3D bounding box predictions from 2D object detections for 100+ categories to place 2nd in SUMO Challenge
- Contributed to baseline methods for SUMO dataset paper with collaborators from Stanford and Princeton

***Computing Betweenness Centrality,* Dr. Oded Green** [*http://sakhi.es/project/hpc]* *Aug. 2016 – May 2017*

- Ported algorithm for computation of betweenness centrality onto NVIDIA GPUs using cuStinger framework

EXPERIENCE

***Head Teaching Assistant for Introduction to Artificial Intelligence,* GT** *Aug. 2019 – Present*

- Managing 16 TAs in grading coursework, proctoring exams, and reviewing course material for 500 undergraduate students
- Creating new course assignments to facilitate better understanding of core machine learning algorithms such as Naive Bayes

***Computer Vision Intern,* The Home Depot** *May. 2019 – Aug. 2019*

- Fine-tuned 20+ models to extract fine-grained features from furniture images to enable training of a generative model that could produce aesthetically compatible furniture collections
- Detected mis-labeled samples in noisy dataset by using Siamese network-obtained embeddings, clustering, and normalized mutual information scores to boost model performance by 5%

***Instructor,* DukeTIP** [*http://sakhi.es/post/teaching]* *Jun. 2018 – Jul. 2018*

- Taught a total of 40 students for four weeks across two courses: Modern Programming and Artificial Intelligence
- Designed syllabi, conducted parent-teacher conferences, crafted assignments spanning five core topics: Fundamentals of Python Programming, Web Development, Pathfinding, Machine Learning, Natural Language Processing

***Software Engineer,* Pindrop** *Jun. 2017 – Jun. 2018*

- Automated a data collection task that consumes 90 days' worth of data for researchers to create adaptive fraud detection models
- Optimized memory consumption for a new service to use 75% less memory than previous implementations
- Created new framework for continuous deployment of fraud detection models to production systems
- Migrated database records from Postgres to Redis and used custom key-value encoding to optimize lookup time

EXTRACURRICULARS

***TEDxGeorgiaTech,* Student Speaker** [*http://sakhi.es/post/ted]* *Sep. 2018 – Apr. 2019*

- Selected among 70 applicants to deliver a TED talk on mentorship in front of a crowd of 200 students
- Chosen as the sole GT student to return as a speaker for April 2019 Conference in front of an audience of 400

SKILLS

- **Coding**: Python, C, C++, Golang, Java, MATLab, MySQL, MongoDB, JavaScript, HTML, CSS
- **Frameworks/Tools:** PyTorch, Scikit-learn, Pandas, OpenCV, Docker, Google Cloud, Kubernetes, AWS, Spark, Arduino