Shahira Abousamra https://shahiraabousamra.github.io/

+1503-314-9086 | sabousamra@cs.stonybrook.edu | https://www.linkedin.com/in/shahira-abousamra/

ABOUT

PhD student at the Department of Computer Science in Stony Brook University.
Advisors: Dr. Chao Chen and Dr. Dimitris Samaras. (*Previously advised by Dr. Roy Shilkrot until my 3rd year*)
My research spans computer vision, machine learning, and biomedical image analysis.

EDUCATION

PhD in Computer Science – Stony Brook University, NY – GPA 4.0 Sep 2016 – Expected Aug 2024

Selected Courses: Advanced Computer Vision (CSE 615), Introduction to Computer Vision (CSE 527), Artificial Intelligence (CSE 537), Big Data Analytics (CSE 545), Analysis of Algorithms (CSE 548)

MSc in Computer Science – University of Alexandria, Egypt Sep 2005 – Jan 2011

Thesis: Enhancing Cache Performance via Adaptive Set-Based Partitioning

Selected Courses: Computer Graphics(CSC 521), Simulation Techniques(CSC 582), Hardware-Software Co-Design(CSC 710-28)

BSc in Computer Science – University of Alexandria, Egypt Sep 2000 – Jun 2005

SELECTED PUBLICATIONS AND AWARDS

Multi-Class Cell Detection Using Spatial Context Representation

S. Abousamra, D. Belinsky, J. Arnam, F. Allard, E. Yee, R. Gupta, T. Kurc, D. Samaras, J. Saltz, C. Chen, *ICCV 2021* (Oral).

Localization in the Crowd with Topological Constraints

S. Abousamra, M. Hoai, D. Samaras, C. Chen, AAAI 2021.

Deep Learning-based Image Analysis Methods for Brightfield-acquired Multiplex Immunohistochemistry Images

D. Fassler*, S. Abousamra*, R. Gupta, C. Chen, M. Zhao, D. Paredes, S. Batool, B. Knudsen, L. Escobar-Hoyos, K. Shroyer, D. Samaras, T. Kurc, J. Saltz, *Diagnostic Pathology, 2020*.

Weakly-Supervised Deep Stain Decomposition For Multiplex IHC Images

S. Abousamra, D. Fassler, L. Hou, Y. Zhang, R. Gupta, T. Kurc, L. F. Escobar-Hoyos, D. Samaras, B. Knudson, K. Shroyer, J. Saltz, C. Chen, *ISBI 2020*.

Utilizing Automated Breast Cancer Detection to Identify Spatial Distributions of Tumor-infiltrating Lymphocytes in Invasive Breast Cancer

H. Le, R. Gupta, L. Hou, S. Abousamra, D. Fassler, L. Torre-Healy, R. Moffitt, T. Kurc, D. Samaras, R. Batiste, T. Zhao, A. Rao, A. Van Dyke, A. Sharma, E. Bremer, J. Almeida, J. Saltz, *The American journal of pathology, 2020*.

Learning from Thresholds: Fully Automated Classification of Tumor Infiltrating Lymphocytes for Multiple Cancer Types

S. Abousamra, L. Hou, R. Gupta, C. Chen, D. Samaras, T. Kurc, R. Batiste, T. Zhao, S. Kenneth, J. Saltz, *CoRR 2019*.

Localization and Tracking in 4D Fluorescence Microscopy Imagery

S. Abousamra, S. Adar, N. Elia, R. Shilkrot; *CVPR Workshops, 2018*.

Best Presentation in Domain Award: Localization in the Crowd with Topological Constraints

S. Abousamra, M. Hoai, D. Samaras, C. Chen, *SBU Graduate Research Day, 2021*.

Best Poster Award: Automating Lifecycle-Phase Identification in Microscopy Images of Zebrafish Embryos

S. Abousamra, A. S. Aydin, R. Shilkrot, *Center of Excellence in Wireless and Information Technology Conference, 2017*.

Best Paper Award: Fair and Adaptive Online Set-Based Cache Partitioning

S. Abousamra, A. El-Mahdy, S. Selim, *ICCES 2011*.

WORK EXPERIENCE

- **Applied Scientist Intern – Amazon** June 2021 – September 2021

Clustering refinement from edge similarity features using graph neural networks.

- **Teaching Assistant – Stony Brook University, NY** September 2016 – December 2018

TA for courses CSE 592 Convex Optimization, CSE 527 Introduction to Computer Vision, CSE 114 Computer Science I - Procedural and object-oriented programming, CSE 305 Principles of Database Systems.

- **Technical Team Lead – Ejada, Alexandria, Egypt** May 2013 – June 2016

Development-team leading and performance optimization for a large-scale software system for the Saudi electric company.

- **Senior Software Engineer – Ejada, Alexandria, Egypt** June 2007 – May 2013

Design and implementation pilot workflow and other analyses workflows for an automation system for poison control centers.
Development and support of ERP systems framework, and implementation of Business Rules, Payroll, and Vacations Engines.

- **Software Engineer – GPS Experts, Alexandria, Egypt** July 2006 – May 2007

Development of most of the functionalities, GUI, and image processing algorithms for a GIS application for as-built road reporting and feature extraction for use by Department of Transportation.

- **Software Engineer – eSpace, Alexandria, Egypt** August 2005 – May 2006

Development of dynamic report generation tools and content management system customization.

CERTIFICATES

- **Coursera Deep Learning Specialization (deeplearning.ai – Instructor: Professor Andrew Ng)**:
  Certificate URL: https://www.coursera.org/account/accomplishments/specialization/5WMNZTSLXHBX

SKILLS

- ***Programming Languages and Tools**:* Python, PyTorch, DGL, NetworkX, Tensorflow, Matlab, C/C++, Java, C#, Javascript, SQL.
- ***Spoken Languages**:* English, Arabic