

# Youssef Elmougy

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## Education

 **Ph.D. in Computer Science** *Atlanta, GA*  
GEORGIA INSTITUTE OF TECHNOLOGY *Aug 2022 - PRESENT*

- Research concentrated in HPC and Systems.
- Working at the Habanero Extreme Scale Software Research Lab.
- Advisor: Professor Vivek Sarkar.

 **M.S. in Computer Science** *Atlanta, GA*  
GEORGIA INSTITUTE OF TECHNOLOGY *Jan 2022 - PRESENT*

- Concentration in High Performance Computing.
- Graduating Dec 2022, IEEE-HKN Student Member.


 **B.S. in Computer Science** *Atlanta, GA*  
GEORGIA INSTITUTE OF TECHNOLOGY *Aug 2020 - Dec 2021*

- Concentration in Artificial Intelligence and Computer Modelling.
- GPA: 3.8/4.0, IEEE-HKN Student Member.

 **B.S in Computer Science** *Hempstead, NY*  
HOFSTRA UNIVERSITY *2017-2020*

- Concentration in Leadership and Innovation in Computing, Minor in Mathematics, GPA: 4.0/4.0, transferred to Georgia Tech.
- Presidential Scholarship Recipient, Provost Scholar, IEEE-HKN Student Member, Phi Beta Kappa's Chapter Book Award.

## Research Experience

 **Systems Research Assistant** *Atlanta, GA*  
HABANERO EXTREME SCALE SOFTWARE  
RESEARCH LAB, GT *May 2022 - PRESENT*

- Working on building graph algorithms (triangle centrality, jaccard index, page rank) for a distributed Actor/Selector system, with goals of improving on AGI, OpenSHMEM, and Conveyor versions.
- Extending implementations of dependency graph terminations within HCLib and the Actor/Selector system.
- Building container images (Docker, Singularity) to create testing environments within PACE HPC Clusters.

 **Reviewer** *Virtual Conference*  
IEEE CLOUD SUMMIT 2021 *Oct 2021*

 **ML Research Assistant** *Atlanta, GA*  
AUTOMATED ALGORITHM DESIGN, GT *Aug 2020 - Dec 2021*

- Working within Stocks subteam of AAD to alter the use of machine learning techniques in developing hybrid algorithms for stock price prediction.
- Program stock trading related primitives, objective functions, and genetic programming frameworks built on top of EMAD.

 **Cloud Research Assistant** *Hempstead, NY*  
HOFSTRA UNIVERSITY *May 2019 - May 2020*

- Working on systems and cloud infrastructure research with Professor Jianchen Shan.
- Research on diagnosing and optimizing the performance interference caused by CPU sharing in multi-tenant GPU clouds.
- Presented at 2019 ASPIRe Symposium, published paper in IPCCC.

## Publications

- Elmougy, Youssef, Weiwei Jia, Xiaoning Ding, and Jianchen Shan. "Diagnosing the Interference on CPU-GPU Synchronization Caused by CPU Sharing in Multi-Tenant GPU Clouds", IEEE IPCCC.*
- Elmougy, Youssef, and Oliver Manzi. "Anomaly Detection on Bitcoin, Ethereum Networks Using GPU-accelerated Machine Learning Methods", IEEE ICCTA.*

## Work Experience

 **Robotics Teaching Assistant** *Atlanta, GA*  
GEORGIA INSTITUTE OF TECHNOLOGY *Aug 2021 - May 2022*

- TA for the class CS 3630 - Introduction to Perception and Robotics.
- Engaged with students on topics of robotics planning, control and localization through weekly office hours.
- Prepared Cozmo and Vector robots for Labs.

 **Webmaster** *Hempstead, NY*  
THETA TAU OMEGA BETA *Nov 2019 - May 2020*


- Lead development and deployment of the chapter website.
- Front-end: Handled updating member profiles and developing user design features.
- Back-end: Handled the full website refactoring, website optimization and scaling, and documenting the code for future use.

 **SEAS IT Technician** *Hempstead, NY*  
EDTECH, HOFSTRA UNIVERSITY *May 2019 - May 2020*

- Provide technical support to faculty members in the DeMatteis School of Engineering and Applied Science.
- Primary support includes specialized software installation and configuration, hardware setup, and classroom technology support.

 **Data Analytics and Web Developer Intern** *Irvine, CA*  
FORKAIA *Jan 2019 - May 2019*

- Gathered specifications based on technical needs. Defined a data analysis process, and identified patterns and trends in datasets.
- Worked on the apps: Namebeat, Heirgraphics, Aura App.

 **Technology Analyst Intern** *New York, NY*  
GOLDMAN SACHS *May 2018 - Aug 2018*

- Joined the Investment Banking and Engineering Division to build and deploy innovations in banking services workflow.
- Followed an Agile SDLC using JIRA to receive performance feedback from the division.
- Enhanced an internal banking application by 20% (measured by weekly work output) through using Elastic Search and RESTful API design in Java.

## Skills

### Programming

Python, Java/JavaFX, C/C++/C#, CUDA, GPU, FLEXSIM, MATLAB, HTML/CSS, ROS, COQ, GIT

### Virtualization

Docker, Singularity, KVM, Linux

### Cloud

AWS, GCP, Azure

### Languages

English, Arabic, French