Sofiya Semenova

Contact Information

Email: sofiyase@buffalo.edu
Website: https://sofiya.io
Github: https://github.com/ssemenova
LinkedIn: https://linkedin.com/in/novasofiya

Education

University at Buffalo, Buffalo, NY — **Aug 2018 - present**
Ph.D. Student in Computer Science
Advised by Dr. Karthik Dantu

Brandeis University, Waltham, MA — **Aug 2013 - May 2017**
Bachelor of Science in Computer Science, High Departmental Honors
Thesis: *"Clouds That Think: Applications of Machine Learning Techniques for Elastic Databases"*
Thesis advised by Dr. Olga Papaemmanouil
Minor: Physics

Peer-Reviewed Publications

Ali J. Ben Ali, **Sofiya Semenova**, and Karthik Dantu. "Platform Variability in Edge-Cloud Vision Systems." 20th International Workshop on Mobile Computing Systems and Applications. (HotMobile 2019)

Ryan Marcus, Olga Papaemmanouil, **Sofiya Semenova**, and Solomon Garber. "NashDB: An Economic Approach to Fragmentation, Replication and Provisioning for Elastic Databases." 37th ACM Special Interest Group in Data Management 2018. (SIGMOD 2018)

Ryan Marcus, **Sofiya Semenova**, and Olga Papaemmanouil. "A Learning-based Service for Cost and Performance Management of Cloud Databases (Demonstration)." IEEE International Conference on Data Engineering (ICDE) 2017. (ICDE 2017)

Teaching Experience

University at Buffalo, Buffalo, NY

Teaching Assistant — **Sept 2018 - present**

- CSE 468/568 Robotics Algorithms — Fall 2020
- CSE 220 Systems Programming — Spring 2019
- CSE 250 Data Structures — Fall 2018

Brandeis University, Waltham, MA

Teaching Assistant — **Sept 2014 - Dec 2014**

- CS 11a Introduction to Computer Science — Fall 2014

Work Experience

Google, Seattle, WA

Software Engineering Intern — **Jun 2019 - Aug 2019**

- Developed a logistic regression model in Chrome to predictively prefetch the page(s) that a user will likely navigate to next, in order to decrease user-perceived latency on mobile devices
- *C++, Python, Scikit-Learn, TensorFlow*

edX, Cambridge, MA

Software Engineer — **Jun 2017 - Aug 2018**

- Improved the performance, reliability, and maintainability of edX's video encoding and delivery pipeline, mainly by implementing an API for AWS SNS notifications for video processing tasks, creating a local testing environment with Docker, and parallelizing video processing tasks
- Increased user first-week engagement by developing an API that tracks and displays user's course completion data and running A/B tests on features that use the data
- Assisted with GDPR compliance
- Trained and mentored a summer intern
- *AWS {RDS, ec2, SNS }, Terraform, Docker, Python, SQL, MongoDB, Django, Javascript*

Software Engineering Intern — **Jun 2016 - Aug 2016**

- Improved accessibility of the edX platform for screen-reader and keyboard-only users, mainly through creating a new, entirely keyboard-accessible essay-writing module

– *Python, Django, Javascript*

Brandeis University, Waltham, MA

MakerLab Web Developer Team Lead **Sept 2018 - May 2019**

– Designed, created, and maintained the MakerLab website, as well as websites and promotional materials for all MakerLab-sponsored events

– *Jekyll, Adobe {Photoshop, Illustrator, InDesign}*

Software Engineer for the Western Jihadism Project **Apr 2015 - May 2018**

– Created a relational schema design, a user interface to access, search, and modify data, and a data visualization dashboard for the Brandeis Western Jihadism Project

– *Python, Django, postgres*

Leadership, Service, and Community Involvement

University at Buffalo, Buffalo, NY

Web Chair — SEMI at ACM Mobisys 2020 (Workshop on Simplifying Edge and Mobile Intelligence) **Jun 2020**

Graduate Student Representative — Computer Science and Engineering Diversity Committee **Dec 2019 - Sept 2020**

Secretary — Computer Science and Engineering Graduate Student Association **Sept 2019 - May 2020**

Conducted K-12 Programming Tutorials at UB Robotics Day **Oct 2018**

Brandeis University, Waltham, MA

Microsoft Senior Student Partner **Sept 2016 - May 2017**

Microsoft Student Partner **Dec 2015 - May 2016**

Undergraduate Department Representative — Computer Science Department **Sept 2015 - May 2016**

President — BITMAP (Computer Science Club) **Sept 2014 - May 2016**

Lead Hackathon Organizer, Web Developer, and Designer — Codestellation (Brandeis' Annual Hackathon) **Sept 2014 - May 2016**

Honors and Awards

ACM MobiCom Mentorship Program, 2020

ACM/IEEE SEC (Symposium on Edge Computing) Travel Grant, 2019

Brandeis Departmental High Honors, 2017

Selected Projects

RRaft , an implementation of Raft, a distributed consensus algorithm. *Rust*

Real-Time Video QA, an application to perform the video question answering task on a real-time video stream. *Python*

Edge-Assisted Trackerless Augmented Reality, an application to split a place detection algorithm between a client and an edge server. *Java*

NashDB, an application to automatically fragment, replicate, and provision elastic, cloud databases. *Java*

WiSDoM, a demo for WiSeDB, a machine learning approach for cost/performance management for cloud databases. *Java*

Edgar Allan Poetry, a poetry generator using RNNs and Markov chains. Won Best Artificial Intelligence Hack at HampHack. *Python*