Sofiya Semenova

sofiya@sofiya.io   https://sofiya.io   https://github.com/ssemenova   https://www.linkedin.com/in/novasofiya/

EDUCATION

Ph.D. Student, Computer Science   University at Buffalo, Buffalo, NY   08/18 - current

B.S. (High Honors)   Brandeis University, Waltham, MA   08/13 - 05/17
Major: Computer Science, Minor: Physics
Thesis: *"Clouds That Think: Applications of Machine Learning Techniques for Elastic Databases"*

WORK EXPERIENCE

University at Buffalo

Graduate Research Assistant   08/19 - current
– Balancing performance goals and resource constraints for real-time, vision-based localization
  applications on mobile devices by using edge servers for prefetching localization and map data
– C++, Java (Android)

Graduate Teaching Assistant   08/18 - 05/19
– Data Structures - Fall 2018
– Systems Programming - Spring 2019

Google

Software Engineering Intern   06/19 - 08/19
– Developed and shipped a logistic regression model in Chrome to predictively prefetch the page(s)
  that a user will likely navigate to next, to decrease user-perceived latency on mobile devices
– C++, Python, Scikit-Learn, TensorFlow

edX

Software Engineer   06/17 - 08/18
– Improved the performance, reliability, and maintainability of VEDA, edX's video encoding
  and delivery pipeline, mainly through the implementation of an API for AWS SNS notifications
  for video processing tasks, creating a local testing environment with Docker, and parallelizing
  video processing tasks
– Developed an API that tracks and displays users' course completion data to increase user
  first-week engagement, and ran A/B tests on proposed features to use the data
– Assisted with GDPR compliance
– Mentored a summer intern
– Linux, AWS (RDS, ec2, SNS), Terraform, Docker, Python, SQL, MongoDB, Django, Javascript

Software Engineering Intern   06/16 - 08/16
– 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

MakerLab Web Developer Team Lead   04/15 - 05/17
– 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

Undergraduate Teaching Assistant   09/14 - 12/14
– Introduction to Computer Science (required introductory Java course)

PUBLICATIONS, WORKSHOPS, AND DEMOS

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 (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.

LEADERSHIP

Graduate Student Representative for the University at Buffalo's CSE Diversity Committee 12/19 - current
Secretary for University at Buffalo's Computer Science Graduate Student Association 09/19 - current
Brandeis University's Computer Science Undergraduate Department Representative 09/15 - 05/16
President of Brandeis' Computer Science Club and Lead Hackathon Organizer 09/14 - 05/16

SELECTED PROJECTS *https://sofiya.io/projects*

Edge Place Detection, 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*

RELEVANT GRADUATE COURSEWORK

Introduction to Algorithms
Robotics Algorithms
Computer Vision and Image Processing
Advanced Computer Vision Seminar
Distributed Systems
Database Management Systems
Advanced Computer Systems