

Sofiya Semenova

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EDUCATION

- Ph.D. Student, Computer Science** University at Buffalo, Buffalo, NY Aug 2018 - current
- B.S. (High Honors)** Brandeis University, Waltham, MA Aug 2013 - May 2017
- Major: Computer Science, Minor: Physics
- Thesis: *“Clouds That Think: Applications of Machine Learning Techniques for Elastic Databases”*

EXPERIENCE

- Graduate Teaching Assistant** University at Buffalo, Buffalo, NY Aug 2018 - current
- Data Structures - Fall 2018
 - Systems Programming - Spring 2019
- Software Engineer and Software Engineering Intern** edX, Cambridge, MA Jun 2016 - Aug 2016, Jun 2017 - Aug 2018
- Full time engineer from June 2017 - Aug 2018, summer intern in 2016
 - Reduced operational complexity of VEDA, edX’s video encoding and delivery pipeline, through dockerization and the creation a staging environment
 - Implemented an API for AWS SNS notifications for processing video ingest tasks
 - Improved VEDA performance via parallelization of ingest 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
 - Improved accessibility of the edX platform for screen-reader and keyboard-only users, mainly through creating a new, entirely keyboard-accessible essay-writing module
 - *Linux, AWS (RDS, ec2, SNS), Terraform, Docker, Python, SQL, MongoDB, Django, JavaScript*
- Web Developer Team Lead** Brandeis University MakerLab, Waltham, MA Apr 2015 - May 2017
- Designed the websites and promotional material for the MakerLab and affiliated events
 - 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, Jekyll, Adobe*
- Software Engineering Intern** Onshape, Cambridge, MA Jun 2015 - Aug 2015
- Added admin tools to the Onshape web app
 - Expanded automated end-to-end UI tests
 - *AngularJS, JavaScript*
- Undergraduate Teaching Assistant** Brandeis University, Waltham, MA Sept 2014 - Dec 2014
- TA for Intro to Programming in Java

SELECTED PROJECTS <https://sofiya.io/projects>

- Tidal to Spotify converter**, a set of utils to convert playlists and songs between Tidal and Spotify. *Python*
- NashDB**, an application to automatically fragment, replicate, and provision elastic, cloud databases. *Java*
- WiSDoM**, a demo for WiSeDB, a machine learning approach to cost/performance management for cloud databases. *Java, Spark, vueJS*
- Cellular Ant-omata**, a program to randomly generate cellular automata. *Java*
- Edgar Allan Poetry**, a poetry generator using recurrent neural nets and Markov chains. Won Best Artificial Intelligence Hack at HampHack. *Python, vueJS*

LEADERSHIP

- Computer Science Undergraduate Department Representative** Sep 2015 - May 2016
- Planned and coordinated departmental events for computer science majors.
- President of Brandeis’ Computer Science Club and Hackathon Organizer** Sep 2014 - May 2016
- President of Brandeis’ CS club. Lead designer and web developer for Brandeis’ hackathon.

PUBLICATIONS

- 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.