

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
– Graduate TA for Data Structures

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.