Militsa Sotirova

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY **December 2021**
Bachelor of Science, Computer Science
Minor: Dyson Business Minor for Engineers
GPA: 3.8, Awards: Dean's List
***Relevant Courses*:** Distributed Computing Principles, Operating Systems, Data Structures and Functional Programming; Embedded Systems; Digital Logic and Computer Organization; Introduction to Analysis of Algorithms; Introduction to Computer Vision; Discrete Structures; The Computing Technology Inside Your Smartphone; Probability Models and Inference, Linear Algebra for Engineers; Futures, Options, and Financial Derivatives; Introduction to Game Theory and Strategic Thinking

Thomas Jefferson High School for Science and Technology (TJHSST), Alexandria, VA **June 2018**
TJHSST Advanced Diploma, Computer Systems, **GPA: 4.41**
Relevant Courses: Computer Systems Research Lab; Parallel Computing; Cryptography; Artificial Intelligence; Computer Vision; Mobile Application Development

SKILLS

Java, Python, SQL, Golang, OCaml, C/C++, JavaScript, HTML/CSS, SQLite, GitHub

WORK EXPERIENCE

Ruminant Farm Systems (RuFaS) Model, Cornell University, *Developer/Designer* **November 2018 - Present**
Designing, developing, maintaining, and testing a Python application for nutrient flow through a farm system; collaborating with student team members and professors from universities nationwide:

- Technical lead of data management team
  - Introduced the usage of databases in the project to store input and output data
  - Designed, implemented, and documented a server that hosts a website allowing users to interact with a database that persists outputs of the model. Interactions include presenting the outputs, filtering displayed outputs, and exporting outputs to standard format files (JSON and CSV)
  - Designed reusable Python modules that use SQL in order to achieve above functionality
  - Lead meetings on the topic and assign weekly tasks to team members
- Redesigned a substantial amount of inefficient legacy code, which reduced application run time by 20% and improved current and future maintenance
- Conducting a sensitivity analysis to examine model behavior
- Independently designed and refactored one of the four major components of the model responsible for the animal life cycle and activity
- Introduced unit-testing to the project and continually maintains/encourages development of the testing suite
- Mentor new team members, flattening the learning curve so they can contribute more efficiently to the project; perform code reviews on a regular basis
- Presented above contributions at conferences to leaders of the project and potential industry partners

RESEARCH EXPERIENCE

Computer Systems Laboratory, TJHSST, *Student Researcher* **August 2017 – May 2018**
Conducted a research project of my own design (*Title: Improving Reading Level Evaluations Using Sentence Structure & Word Frequency*):

- Goal was to improve the way we think about analyzing text by coming up with more in depth criteria
- Designed a program using Python's Natural Language Toolkit module and the Oxford English Dictionary API to analyze reading levels of different texts using a formula I developed based on word frequency and sentence structure; created a website for easy user interaction
- Wrote a research paper about my developments and created a poster to display final work
- Presented final work to teachers and professionals at tjSTAR, an annual symposium to showcase research

EXTRACURRICULARS

Cornell Club Swim Team, Cornell Club Spikeball Team
Swim Coach: Instructed kids ages 5 – 14 on swimming techniques as well as how to be excellent teammates and peers
Environmental Science Club: Developed aquaponic system and did STEM outreach to middle school students
Environmental Coding Project: Protected endangered turtle and snow leopard species with location-tracking mobile application