KATYA KATSY

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ABOUT

I am a 5th year Computer Science student at UC Davis. Originally a math major, I switched to my current major/minor combination, because I am interested in the intersections of mathematics, statistics, and computer science. I enjoy working on interdisciplinary projects, and I love seeing how different fields of study come together to solve problems. I intend to pursue a Masters in Computer Science to get a deeper understanding of Machine Learning and Data Science and to be actively involved in academic research.

EDUCATION

University of California, Davis - DECEMBER 2021

B.S. in Computer Science, with minors in Mathematics, Statistics, and Russian.

Overall GPA: 3.52 | **Upper-Division GPA:** 3.74

SKILLS: Python | Linux | C/C++ | R | Swift | Matlab | Rust | LaTeX

WORK EXPERIENCE:

RESEARCH ASSISTANT

Computational Linguistics Lab @ UC Davis, OCTOBER 2020 - PRESENT

- Created a web application demo using HTML/CSS/JavaScript front-end and Flask/Python back-end. Run on VM instance using Google Cloud's Compute Engine. Python libraries used: Owlready2, a module for ontology-oriented programming, and Hugging Face's transformers for question answering.
- Generated paraphrases with GPT-J for semantic parsing using the "Building a Semantic Parser Overnight" dataset.

AI/ML INTERN

Leidos Inc., JUNE 2021 - AUGUST 2021

- Researched domain adaptation methods of pre-trained language models and implemented semi-supervised domain adaptation methods for named entity recognition from multiple research papers.
- Worked with Hugging Face's transformers, simpletransformers, PyTorch, and BERT/RoBERTa.

RUSSIAN TUTOR

UC Davis Russian Department, SEPTEMBER 2019 - DECEMBER 2020

- Volunteered as a tutor for the Russian Department of UC Davis; assisted lower and upper division students with their writing, reading, and speaking skills during weekly office hours.

RESIDENT ADVISOR

UC Davis Student Housing, SEPTEMBER 2018 - APRIL 2020

- Collaborated with professional staff and a 15-person team of resident advisors to plan programs and to address concerns regarding the safety and well-being of 600+ students living in assigned residence hall communities.

COURSEWORK

CS ELECTIVES

- ECS132: Probability & Statistical Modeling
- ECS170: Artificial Intelligence
- ECS171: Machine Learning
- ECS189E: IOS Programming
- ECS189L: Applied Data Science
- ECS165: Database Systems
- LIN127: Text-Processing & Corpus Linguistics
- LIN177: Computational Linguistics

MATHEMATICS

- MAT21D: Vector Calculus
- MAT22B: Differential Equations
- MAT108: Abstract Mathematics
- MAT128A: Numerical Analysis
- MAT145: Combinatorics
- MAT167: Applied Linear Algebra

STATISTICS

- STA131AB: Mathematical Statistics
- STA106: Regression Analysis
- STA108: Analysis of Variance
- STA141A: Statistical Data Science

CLASS/PERSONAL PROJECTS:

IN-MEMORY L-STORE DATABASE, WINTER 2020

- Worked as a part of a 5-person team to build a relational database with an SQL-like query interface, bufferpool management, and concurrency control from scratch. Written with an object-oriented approach in Python.

SOCIAL NETWORK VISUALIZATION, SUMMER 2020

- Plotted social networks using Matplotlib, Numpy, and Networkx libraries. Applied the Louvain Community Detection algorithm to visualize distinct communities. Performed basic social network analysis on network graph.

TWEET SENTIMENT ANALYSIS, FALL 2020

- Collected 3,000 tweets containing the query "vaccine" using Twitter API. Classified tweet sentiment using Naive Bayes and Neural Network models, achieving 0.72 accuracy. Libraries used: Pandas, NLTK, Sklearn, and Keras.

TOPIC MODELING OF EUGENICS JOURNALS, FALL 2020

- Worked as a part of a 5-person team to analyze articles from 20th century American eugenics journals. Used SpaCy to perform topic modeling and named entity recognition to visualize changes in article content over time.